

Advances in Spatial Science

Cristina Martinez  
Tamara Weyman  
Jouke van Dijk *Editors*

# Demographic Transition, Labour Markets and Regional Resilience

 Springer

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# Demographic Transition, Labour Markets and Regional Resilience

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# Foreword

Demographic transitions, the subject of this book, have been reshaping our economies, societies, politics and international relations for over two centuries. The planet saw its population explode from 1 billion in the year 1800 to over 7 billion today, as mortality rates fell sharply thanks to improved hygiene, nutrition and economic development. In more recent times, declining fertility rates have been dragging down world population growth and, together with increasing life expectancy, resulting in an ageing of our populations. Selective migration patterns also occur within and between countries. As a result, some areas show a rapidly increasing population whereas other areas suffer from population decline.

The world's different continents are at different stages of these demographic transitions. Europe is the world's "oldest continent", despite the recent influx of many youthful refugees, followed by North America and Australia. From the case studies in Poland, the Netherlands and Sweden, it becomes clear that within Europe there are also substantial differences. Ageing in Sweden and the Netherlands is comparable with the United States and much less severe than in the South-European countries such as Spain and Italy which are comparable in ageing with Japan. Asia, the region that has experienced the world's fastest economic growth this past half century, is also experiencing the world's fastest rate of population ageing.

Asia is unique in that it also has the world's greatest "demographic diversity". A long period of fertility rates below the "replacement rate" of 2.1 children per woman has now led to a slowly declining population in Japan, with adverse effects on economic growth and public budgets. Korea and Taiwan are both following the same pattern, as is China due in part to its one-child policy (now reformed into a two-child policy). China's demographic transition has been so abrupt that, in contrast to its North East Asian neighbours, it will become old before it becomes a high-income country.

At the other end of the Asian spectrum are countries like India, Indonesia and the Philippines, which are still at an earlier stage in their demographic transitions. They have large youth bulges now entering the labour market, but these energetic young people are in desperate need of skills and training and jobs. Asia's demographic

diversity opens opportunities for mutually beneficial migration from labour-rich to labour-poor countries. But most regrettably, apart from the low-fertility cases of Hong Kong and Singapore, too few countries are opening their doors to significant immigration. Europe is now confronted with increasing migration from conflict areas in Africa and the Middle East. Migration of people is also related to migration of human capital. Some cities in the United States showing population decline are also confronted with a decline in stocks of human capital, while other cities which have depopulated are still accumulating higher educated individuals.

All these demographic transitions are impacting different national regions and cities to different extents and in different ways. This highlights the need for governments at all levels, from the local to the regional and national, to respond to the manifold challenges, with a response which is not one size fits all, but is modulated according to the specificity of the region or city.

International cooperation is also being tested by migration pressures and cross-border capital flows. Businesses must adapt and respond to changing labour supplies. Trade unions and civil society organisations are having to represent the interests of a dynamically changing demography. Each and every one of us is now living in rapidly changing demography which is challenging social cohesion.

The book is a unique source of information, analysis and ideas on demographic change, labour markets and regional resilience. Country case studies, often with a regional focus, cover European countries like Poland, the Netherlands and Sweden, the United States and Asia's leading economies of China, Japan and Korea. Issues dealt with include urban and regional aspects, retirement security, labour markets and productivity. The authors of each chapter are leading experts in their fields. I can only make the most unreserved recommendation to members of all stakeholder groups to take the time to benefit from their knowledge and experience by reading this excellent volume.

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# Introduction

Demographic change is a universal feature of our times, affecting all countries at all stages of development. The world's population is increasing, but population growth rates are in decline. This slowdown is essentially due to falling fertility rates. Meanwhile, in OECD countries, people are living longer. This means that the distribution of age in the population is shifting, with proportionately fewer young people than older people. Ageing is not a problem unto itself: Individuals want to grow old. Overall, people are significantly healthier than in the past and enjoy longer lifespans. However, the aggregate effect of population ageing and the resulting changes to the population structure of many countries pose huge challenges for their economies and their ageing populations, prompting multiple questions (Newbold 2015).<sup>1</sup> Will there be the capacity to support a growing number of retirees and fund pensions and long-term health care with a smaller and declining labour force? What are the economic benefits and costs of ageing at the local, regional and national levels?

At the local level, the main reason for population ageing is migration, with the outmigration of young workers to highly urbanised areas, leaving behind older populations in less urbanised and rural areas. The net result is economic and demographic decline compounded by an older and smaller population. This trend is already creating policy and fiscal challenges in some countries. The larger impact of demographic transition can be observed at the local level where institutions, organisations and the community feel the dynamics of shrinkage and ageing of their labour markets. Despite the severity of the global trends and the difficulties in reversing these trends in the short term, national and local institutions and stakeholders can and should enhance their pathways for sustainable development by smart management of their demographic transition. This book reviews these

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<sup>1</sup>Newbold KB (2015) Population aging: what role for regional science? *Ann Reg Sci* 55:357–372. doi:[10.1007/s00168-015-0676-y](https://doi.org/10.1007/s00168-015-0676-y)



trends in a selection of countries and suggests strategic policies that need to be implemented to make labour markets more resilient and more inclusive.

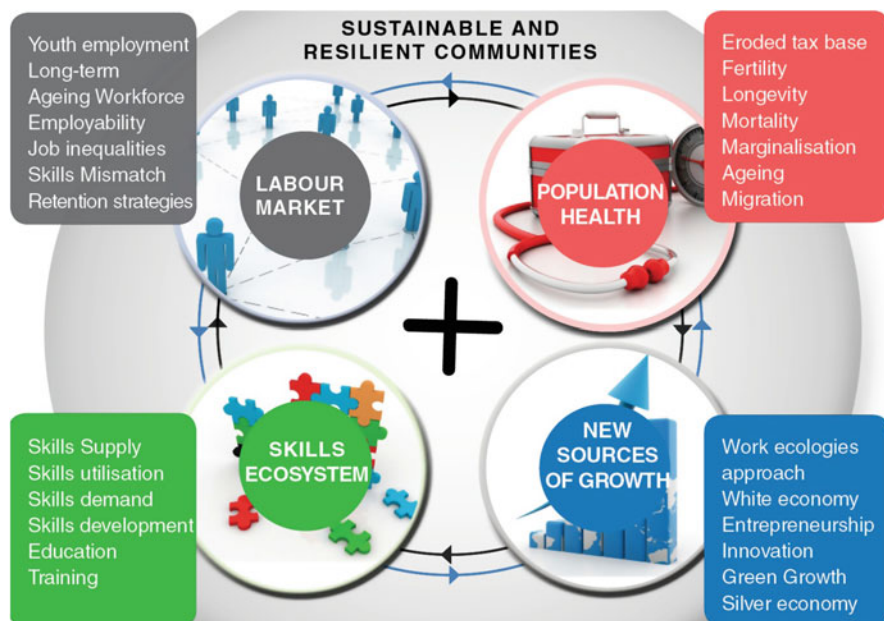
Demographic change is recognised worldwide as a fundamental policy challenge facing not only national governments across the world, but due to its greater complexity at lower spatial scales, is even more challenging for regional and local governments. Such demographic changes include falling fertility rates, increased life expectancy, migration, population ageing, youth unemployment and localised population shrinkage. These processes impact the size and composition of the labour force, the stock of human capital and labour productivity. The impact of demographic change is selective by individuals according to e.g. age and education and differs between urban and rural areas. As a result of these demographic changes, strategic solutions must take into account the interplay of different elements, integrating the characteristics of the community, human capital, industrial composition and social distribution (Martinez-Fernandez et al. 2012).<sup>2</sup> As illustrated in Fig. 1, sustainable and resilient communities rely on the complex interaction of four key areas: population and health, such as ageing, fertility and longevity; new sources of growth, such as the silver and white economies, entrepreneurship and innovation; skills ecosystems, such as skills supply development, utilisation and demand; and labour markets, such as employment, unemployment, ageing workforce and skills mismatch. The performance characterisations of these factors depend on elements in other key areas. These are significant transitional issues facing governments at all levels, but especially at the local level, in managing industrial development, job creation, welfare levels and sustainable development. This provides a framework for the analysis in later chapters of specific regional case studies and chapters that analyse more in-depth specific issues like securing income security for older (retired) people, spatial changes in the human capital stock and changes in labour productivity related to population change.

The book is divided into eleven chapters. It starts with two general chapters. In Chap. 1, the demographic change phenomenon is introduced from an international perspective and where the challenges and impacts of demographic transition are discussed and the need for suitable indicators to develop effective and efficient policies. Chapter 2 examines demographic trends across OECD cities and regions and discusses challenges facing different types of places and addresses the policy dilemmas and conflicts at different spatial scales.

After these general chapters, a series of five chapters presents a cross-country analysis of the impacts of demographic transitions in Europe and Asia, focusing on the challenges facing regional and local communities and what governments and key stakeholders can do to prepare and anticipate the changes or turn them into opportunities. In Europe, the Netherlands, Sweden and Poland are analysed. A comparison of these three countries is interesting, because the institutional setting, the spatial scale, population size and population density are very different. The Netherlands and

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<sup>2</sup>Martinez-Fernandez C, Kubo N, Noya A, Weyman T (2012) Demographic change and local development: shrinkage, regeneration and social dynamics. OECD Publishing, Paris. doi:[10.1787/9789264180468-en](https://doi.org/10.1787/9789264180468-en)



**Fig. 1** Interplay of factors impacting demographic change. *Source:* Based on Martinez-Fernandez, C., Kubo, N., Noya, A., and Weyman, T., (2012), *Demographic Change and Local Development: Shrinkage, Regeneration and Social Dynamics*, OECD Publishing, Paris

Sweden are both small in terms of population, but spatial scale and population density are very different. Poland is much larger in terms of total population, and it has a very different history of institutional and economic development. Across Asia, results are presented for China and Japan which are also very different in spatial scale and institutional and economic development. The following chapters give an in-depth analysis of specific elements from Fig. 1 of demographic transition: South Korea's labour market trends among older workers as another pillar of income security; the United States' declining population areas are associated with a decline in educated individuals; and an econometric analysis of Dutch data on the effects of ageing on labour productivity and the impacts on welfare. In Chap. 11, potential instruments for decision-making and strategic prioritisation of actions are identified and related to strategic, coordinated policy responses involving local solutions, based on policy themes that address sustainability and inclusiveness of the labour market. Next, we will describe the contents of the chapters in more detail.

Chapter 1 by Martinez and Weyman gives an overview of the major worldwide trends in demographic changes. Falling fertility rates, increased life expectancy, migration, population ageing and localised population shrinkage are significant policy challenges that national, regional and local governments are facing. This chapter outlines the objectives of the study, illustrates the demographic transition across the OECD and globally and highlights the complexity and interplay of the factors impacting demographic change. In order to get an insight into these

processes and to monitor evolving trends, adequate statistical information is needed and this should be presented in a way which is suitable for policy purposes. This chapter ends by describing in detail the two currently available ageing indexes to assist national policymakers in identifying gaps and policy response:

- Active Ageing Index (AAI), for Europe only
- Global AgeWatch Index

The AAI highlights the national differences between countries and the challenges of ageing populations in society. In addition to the AAI which is limited to European countries, the newly launched Global AgeWatch Index covers countries from all over the world. It is supported by international organisations such as the World Bank, the World Health Organization (WHO), the International Labour Organization (ILO) and the United Nations Educational, Scientific and Cultural Organization (UNESCO).

In Chap. 2 *Cities, Regions and Population Decline*, McCann examines some of the key demographic trends across OECD cities and regions and discusses some of the most important challenges facing different types of places. In particular, the links between ageing and population decline will be discussed in the context of local labour markets and shifts in long-run public policy needs. Insights from Japan and European countries regarding urban policies will be examined, and the key challenges associated with fostering long-run regional resilience in the face of adverse demographics will be discussed. The impacts of these discussions on changes in public policy perceptions will also be discussed, and suggestions for new research agendas in urban economics will also be put forward.

After these general chapters, a series of four chapters follows that present detailed analysis of specific regions in countries in Europe and Asia.

Perek-Bialas, Sagan, Stronkowski and Szukalski present in Chap. 3 *Regional Approaches to Demographic Change in Poland* a case study that reveals the complexity of demographic challenges occurring within the regions, with each region experiencing different issues associated with its own socio-economic situation. The Małopolska and Pomorskie regions are experiencing population growth and ageing, while Łódzkie is experiencing population decline, ageing and low fertility, together with youth and young adult health concerns. These differences in demographic transitions require a territorial approach so that regional and local perspectives on policy preparation, development and implementation are coordinated with national policy efforts and key European programmes.

In Chap. 4 *Resilient Labour Markets and Demographic Change in Selected Regions of the Netherlands* Verwest, Taylor, Van Wissen, Van Dijk, Edzes, Hamersma, Cörvers, De Grip and Van Thor show that although the population of the Netherlands is increasing, the population growth rate, even if fluctuating considerably, has been declining since the 1960s. The age structure of the Netherlands since the 1960s has also experienced change, declining youth (under 20 years old), growth and then decline in the 20–40-year-old cohort, a significant increase in the 40–65-age cohort and gradual increases in the 65–80+ cohort. As a result of the changing demography, the workforce will be older and

this will impact upon the labour market, increasing the number of older workers and reducing the number of new entrants into the labour market. The case study of the Netherlands revealed the different responses to demographic challenges occurring within the regions, with each region (Groningen/Drenthe, Limburg and Zeeland) experiencing different issues associated with its socio-economic situation, localised population shrinkage, population ageing, migration and labour force shortages and skill gaps.

Chapter 5 by Wenmeng Feng on *China's Response to Its Ageing Population* discusses the situation in China. Today, China is still the most populous country in the world. By the end of 2015, China's population reached 1.37 billion, accounting for 18.7% of the total world population. However, China is now experiencing a changing population structure as a result of falling birth rates and the start of an ageing population. This chapter discusses China's current level of preparedness for its ageing population and a case study of Beijing covers the current and potential need of the elderly and the supply of old-age people-oriented products and services.

Shiraishi, Tomino and Yahagi show in Chap. 6 *North Kyoto's Response to Japan's Shrinking Population* that the Japanese population is both decreasing rapidly and ageing due to low birth rates and longer life expectancies. Within marginalised areas, such as North Kyoto, the situation is becoming highly problematic because the main industry has been agriculture. Stagnation of economic activities, along with depopulation and ageing, is making traditional community functions fragile. Universities are providing a supporting role for regional and local authorities with research studies and practical policy recommendations for local communities and the development of socio-economic alliances and local collaboration. This chapter explores the Community and University Alliance for the Regeneration of Northern Kyoto Area and the potential of the Kyoto Model.

In Chap. 7, Israelsson, Nilsson, Sundqvist and Mulk-Pesonen shed light on *Generation Shift in the Swedish Labour Market* and show that there is a large generational shift in the Swedish labour market that will lead to a higher share of retirements in different sectors, regions and professions than in previous decades. As a result of the slower growth of the working-age population, the labour supply is expanding less rapidly in the long term up to 2030, especially in small and medium-sized municipalities. Future increases in the working population will consist of foreign-born residents while the number of those born in Sweden is expected to decrease. Case studies of two particularly affected regions indicate that the addition of labour to these labour markets will decrease over a 15-year period, while an increasing number of retirements will create vacancies that have to be filled. Further efforts are needed nationally and especially regionally to meet future labour demand in particularly affected regions. The analysis highlights various measures which can be taken in order to alter future labour market prospects regarding the supply of labour in the sense that more persons become available for work.

Chapter 8 by Lee on *Population Ageing and Retirement Security in Korea* shows that rising life expectancy and persistently low birth rates are ushering South Korea into a rapidly ageing society. The elderly population (aged 65 and older) accounted for 13% of the total population in 2015, which will further increase to 20% in 2026

and to 38% in 2050. The working-age population, on the other hand, will shrink from 73% of the total population in 2015 to 53% in 2050, carrying important implications for the country's long-term economic prospects. As the elderly population expands rapidly, income security in old age is a critical concern for the whole society. The chapter examines income sources for old age, highlighting changes in the role of public pensions, intergenerational family support and earnings. Declining family support and inadequacy of public pensions indicate the challenges faced by the Korean government and individuals in preparing for retirement. The chapter also discusses employment trends among the older population, which is becoming an important pillar of income security in old age.

Franklin shows in Chap. 9 *Shrinking Smart: US Population Decline and Footloose Human Capital* that a telling sign of urban vitality is the extent to which cities possess human capital and suggests that this indicator could be particularly illuminating within the context of evaluating the shrinking city phenomenon in the United States. In the United States and elsewhere, a primary marker of city dynamism has tended to be overall population growth. However, population change statistics mask underlying shifts in population composition that may, in many ways, be more important to a city's well-being than total numerical increases. Borrowing the concept of "smart shrinkage" from the planning literature, this chapter argues that one potential indicator of "smart" decline could be the renewed or persistent attraction of these locations for the college educated. Thus, this chapter explores the extent to which declining cities in the United States—those experiencing shrinking populations—are also associated with a decline in stocks of human capital. Two main questions are addressed. First, are there exceptions to the expected association between decline and net decrease of the college educated, and if so, are there generalisations that can be made about these sorts of locations? Second, and alternatively, what can be said about growing places that are losing these individuals?

Broersma, Van Dijk and Noback discuss in Chap. 10 *The Impact of Ageing on Welfare and Labour Productivity: An Econometric Analysis for the Netherlands*. Ageing attracts more and more attention because it has many implications for welfare and society and is an important subject for policymakers. This chapter analyses the effects of ageing on welfare and labour supply. How can a drop in labour supply be compensated for while maintaining welfare? In principle, there are four possible ways: (i) increasing the retirement age, (ii) increasing the annual number of working hours, (iii) increasing labour productivity, (iv) increasing net labour participation and (v) optimising the spatial allocation of production activities and jobs. The chapter focuses on labour productivity growth as a means to counteract the adverse effects of ageing by using an entirely new and unique micro-level data set for the Netherlands.

In the concluding Chap. 11, *Re-positioning Labour Markets with Demographic Change and Ageing*, Martinez, Weyman and Van Dijk conclude that demographic change is quickly rising in the policy agenda of all countries, chiefly in OECD countries, where population shifts and rapid ageing require urgent repositioning of labour markets towards sustainable and resilience strategies. This chapter reflects on the lessons learned from this book and offers practical guidelines to manage demographic change in cities and regions. To assess the impact of demographic

transition at the regional/local scale in a compact and comprehensive way, tools such a dashboard and spider diagrams can be used. A pilot dashboard is presented for the Netherlands and Poland. In addition to that, indexes based on surveys reflecting Older Workers Friendly Places (OLWOF) and Work Elderly Friendly Places to Live (ELFRI) can be represented in the form of spider diagrams. To illustrate the usefulness, spider diagrams are shown for the case study regions in the Netherlands and Poland. The chapter ends with a set of guidelines for policies to manage smart demographic transition illustrated by examples of concrete policy measures.

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# Chapter 1

## Demographic Change in a Complex World

Cristina Martinez and Tamara Weyman

### 1.1 Global Features of Demographic Change

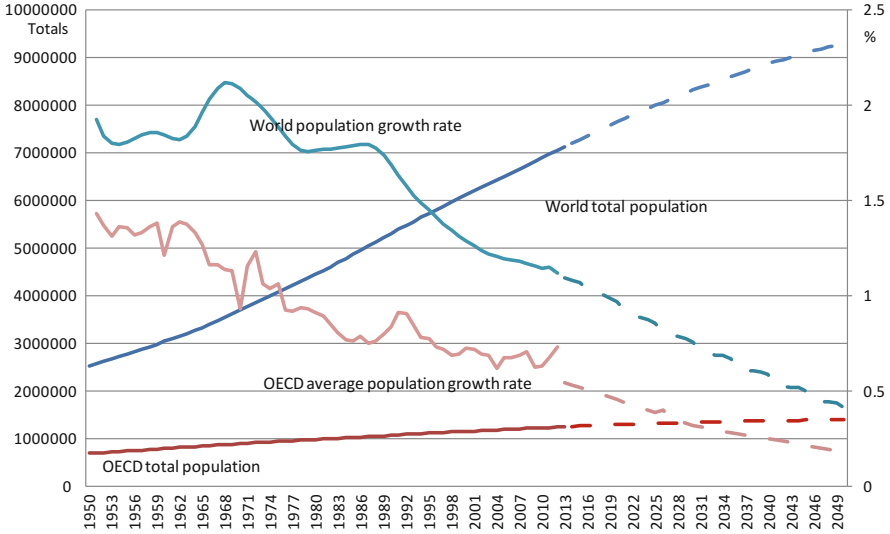
Although the world's population is increasing, population growth rates are in decline, from a peak of 2.1% in 1968 to 1.1% in 2012, and are projected to continue to decline into the future, to 0.4% by 2050 (Fig. 1.1) (OECD StatsExtract). Total populations for OECD member countries are also predicted to steadily increase, but at a slower rate because of the more economically developed member countries; however, as with the worldwide projection, the population growth rate is expected to decline in the future to 0.19% by 2050 (Fig. 1.1) (OECD StatsExtracts).

#### *1.1.1 The Population Slow-Down Is Primarily the Result of Declining Fertility Rates*

In 1970, the average world fertility rate was 4.85 and that of the OECD was 2.73; by 2009, it had dropped to 2.52 and 1.74 respectively (OECDstats Extract). During the period 1950–1955, there was a significant gap between more developed regions and less developed ones (2.81 and 6.07 respectively) (United Nations Department of Economic and Social Affairs, Population Division 2011). Interestingly, according to the UN World Population Prospects, both more developed regions and less developed ones will have similar fertility rates by 2065 (Fig. 1.2), at a rate of 2.02 and 2.12 respectively (2060–2065).

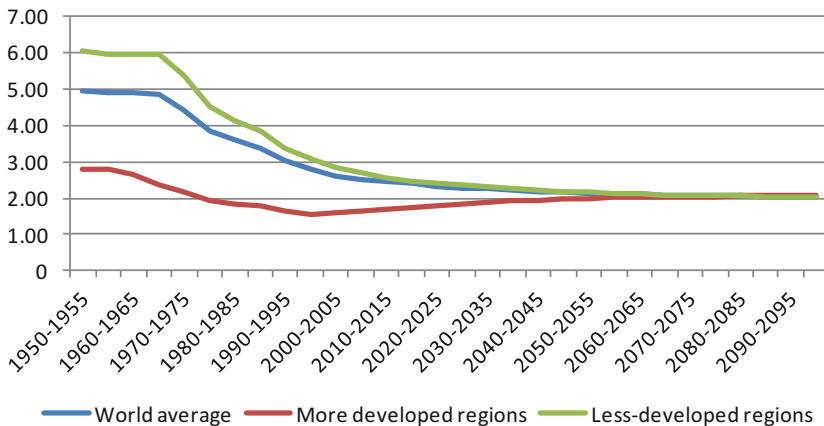
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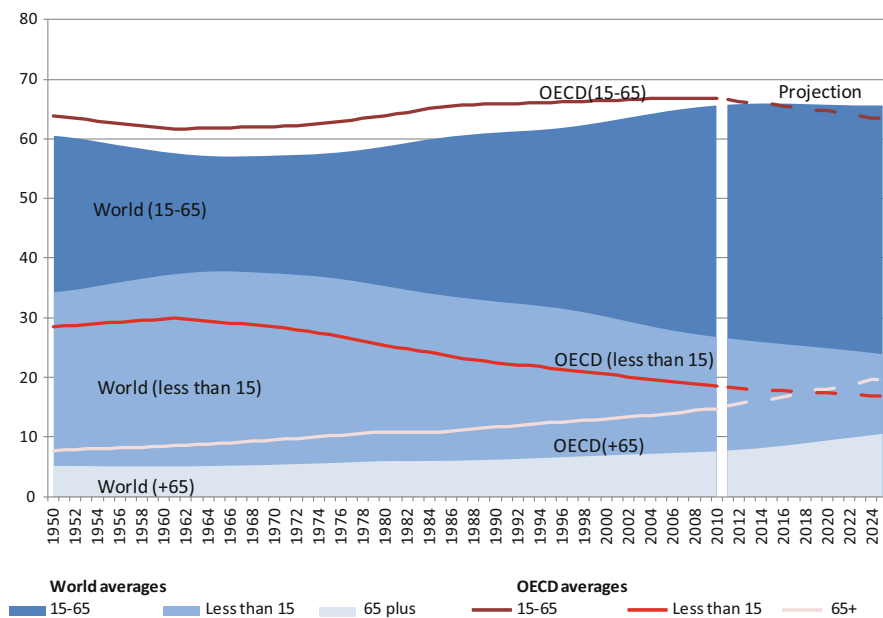


**Fig. 1.1** World and OECD population totals, growth trends and projections. *Note:* Calculated estimate values for OECD totals are projections from 2031 to 2049. *Source:* OECD (2014), *Fostering Resilient Economies: Demographic Transition in Local Labour Markets*, available at: [http://www.oecd.org/cfe/leed/Fostering-Resilient-Economies\\_final\\_opt.pdf](http://www.oecd.org/cfe/leed/Fostering-Resilient-Economies_final_opt.pdf) based on data from OECD.StatsExtract. Available at: <http://stats.oecd.org/Index.aspx>. Accessed June 2012

As a consequence of falling fertility rates, the transition in population structure, as illustrated in Fig. 1.3, means that the world and OECD average youth (aged less than 15 years old) populations are declining. In 1950, the world and OECD youth accounted for 34.3% and 28.9% respectively; by 2010, it had dropped to 26.8% and 18.5% respectively; and by 2025, it is estimated to continue to decline to 23.9% and 16.9% respectively. Currently, the world youth average is 8% points higher than the OECD's, reflecting the OECD's membership of more developed countries. At the same time, the average world and OECD elderly population rates (aged 65 and over) are increasing. In 1950, the world's and OECD's elderly accounted for 5.2% and 7.7% respectively; by 2010, these figures had increased to 7.6% and 14.5% respectively, with the OECD average expected to exceed the youth population growth rate by 2019. By 2025, the elderly will account for 10.5% and 19.6% respectively (United Nations, Department of Economic and Social Affairs, Population Division 2011; OECDstats Extracts).



**Fig. 1.2** Fertility rate projections for the world and more-/less-developed regions. *Source:* OECD (2014), *Fostering Resilient Economies: Demographic Transition in Local Labour Markets*, available at: [http://www.oecd.org/cfe/leed/Fostering-Resilient-Economies\\_final\\_opt.pdf](http://www.oecd.org/cfe/leed/Fostering-Resilient-Economies_final_opt.pdf) based on data from United Nations, Department of Economic and Social Affairs, Population Division (2011), *World Population Prospects: The 2010 Revision*, CD-ROM Edition, United Nations, New York

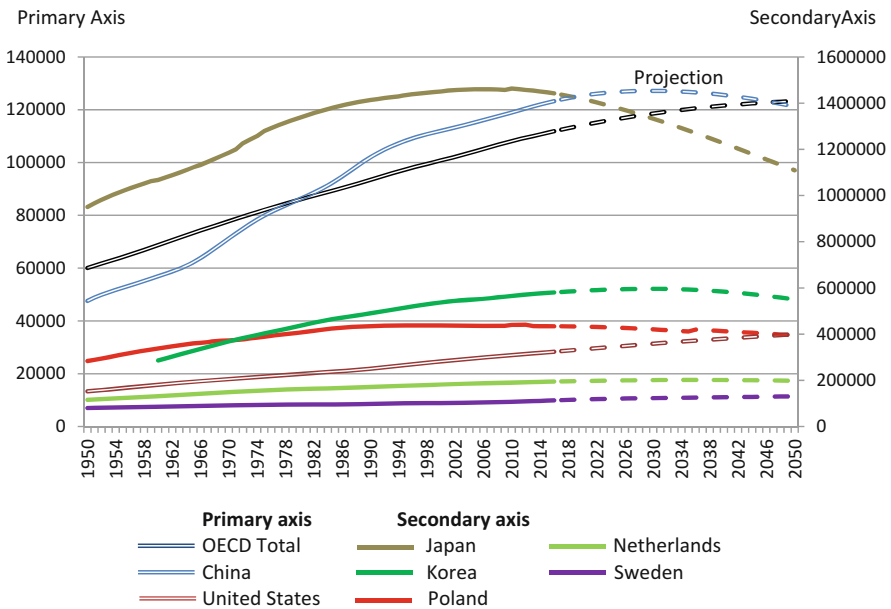


**Fig. 1.3** Trends and projections in population structure: World and OECD averages. *Note:* Calculated estimate values for world average projections for the values between the 5-year intervals. *Source:* OECD (2014), *Fostering Resilient Economies: Demographic Transition in Local Labour Markets*, available at: [http://www.oecd.org/cfe/leed/Fostering-Resilient-Economies\\_final\\_opt.pdf](http://www.oecd.org/cfe/leed/Fostering-Resilient-Economies_final_opt.pdf) based on data from United Nations, Department of Economic and Social Affairs, Population Division (2011), *World Population Prospects: The 2010 Revision*, CD-ROM Edition, United Nations, New York; OECD.StatsExtract. Available at: <http://stats.oecd.org/Index.aspx>, accessed June 2012

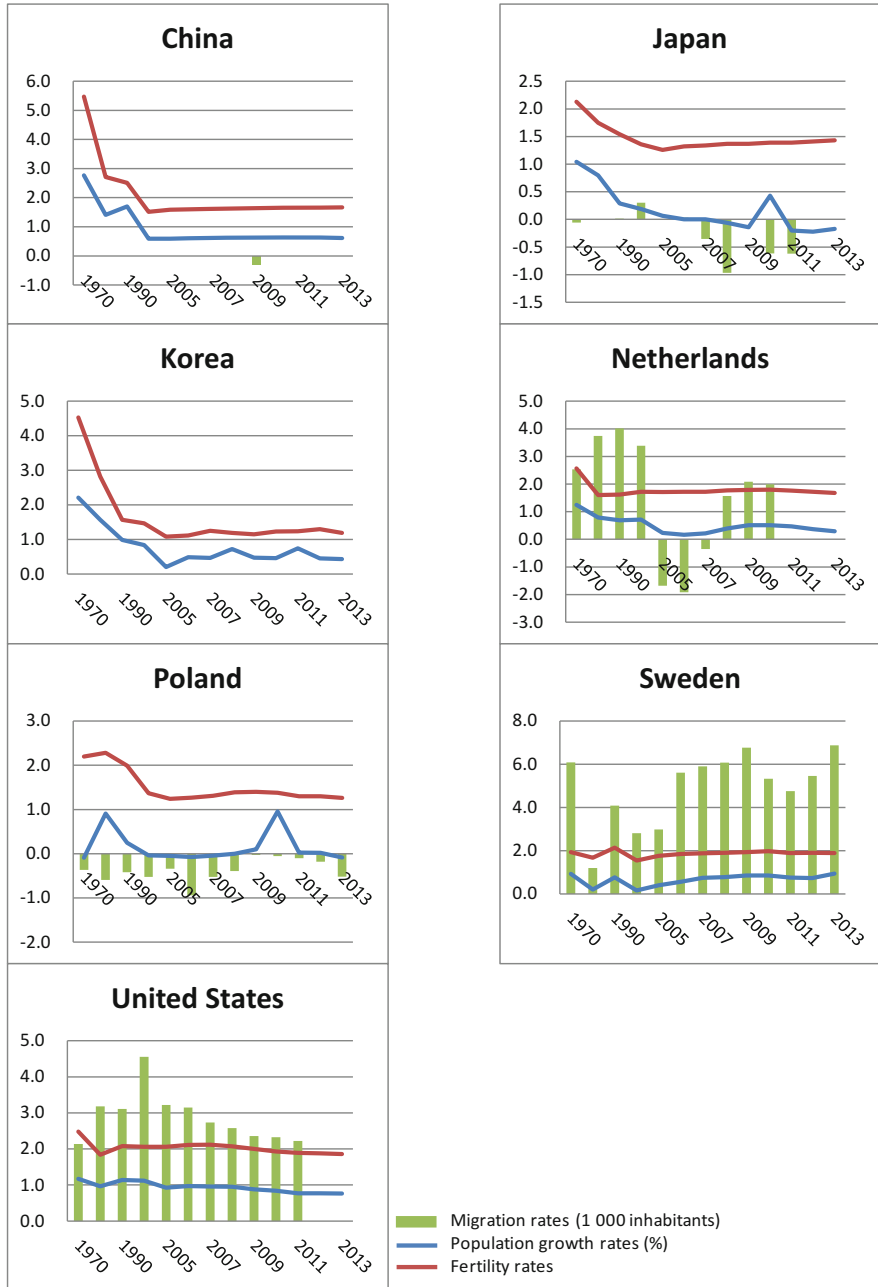
### 1.1.2 Population Dynamics Indicate Shrinkage or Stagnation

Population shrinkage or stagnation is either being experienced or is projected to occur in the near future in many countries, but will be much more pronounced in specific regions as will be shown in the case studies analysed in later chapters. As illustrated in Fig. 1.4, Japan will experience a significant population decline and the People's Republic of China and Korea is expected to decline from 2030, both reflects of population policy. Poland has been steadily declining since the early 2000s as result of entering the European Union, which has made out-migration to other EU-countries easier. Generally, population stagnation will occur in the Netherlands and Sweden, which is comparable to the OECD levels.

Fertility levels and international migration rates impact the growth rates of countries. The majority of case study countries are experiencing declining fertility rates, to below replacement levels (of 1.5), with notable declines in China, Japan, Poland and Italy corresponding to the overall declining population growth rates. Fertility stagnation has occurred in the Netherlands, Sweden and United States. As illustrated in Fig. 1.5, it is the migration rates that truly impact the population



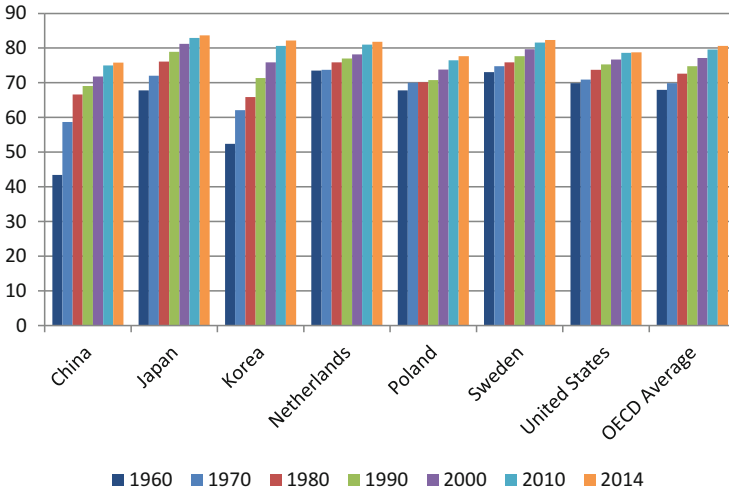
**Fig. 1.4** Population trends and projections (1950–2050). *Note:* The primary axis (left axis) is for the OECD and China due to their large population totals. The secondary axis (right) is used for the other countries with smaller population totals. *Source:* Updated from OECD (2014), *Fostering Resilient Economies: Demographic Transition in Local Labour Markets*, available at: [http://www.oecd.org/cfe/leed/Fostering-Resilient-Economies\\_final\\_opt.pdf](http://www.oecd.org/cfe/leed/Fostering-Resilient-Economies_final_opt.pdf) based on data from OECD. StatsExtract. Available at: <http://stats.oecd.org/Index.aspx>, accessed September 2016



**Fig. 1.5** Population growth, fertility and migration rates (1970–2010). *Source:* Data from OECD. StatsExtract. Available at: <http://stats.oecd.org/Index.aspx>, accessed September 2016

growth, reflecting the fluctuating trends, especially in the Netherlands, and Sweden. Poland has experienced a negative migration rate since the 1970s, which has significantly impacted its population growth. In China, although migration statistics are not available, a fundamental decline in fertility and thus population growth has occurred. Both fertility rates and migration patterns reflect the policy focus needs of different nations, encouraging families, resilient communities and economies.

There has been a significant increase in life expectancy across all of the case study countries, which reflects better healthcare, lifestyles and age management (Fig. 1.6). In 2014, Japan (at 83.7 years) had the highest life expectancy, followed by Sweden (82.3 years) Korea (82.2), and the Netherlands (81.8). China has the lowest life expectancy, but has experienced the greatest increase since the 1960s (when it was 43.4 years) to 2014 (75.8 years), an overall increase of 32.4 years. In 2014, Poland had the next lowest life expectancy (77.7 years), this has increased by 9.9 years since the 1960s, followed by the United States (78.8 years) increased by 8.9 years since 1960. Other countries with notable improvements since the 1960s include Korea (29.8 years) and Japan (15.9 years). The increasing life expectancy rates will have a profound impact on the population structure of these countries in the future, and will have implications for health, labour and social inclusion policies.

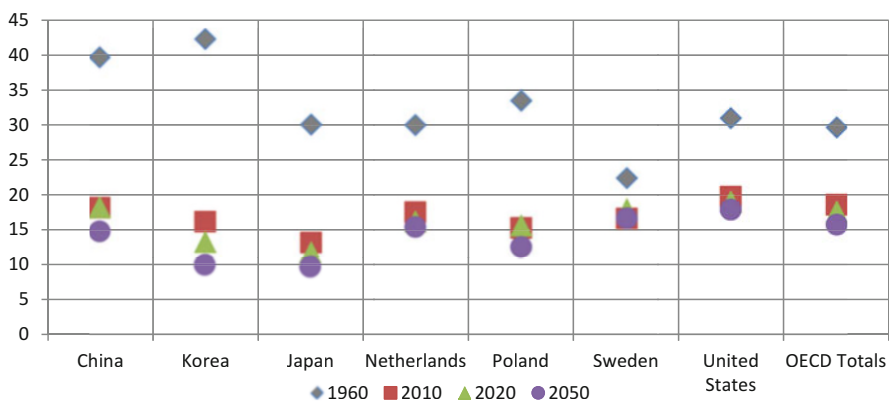


**Fig. 1.6** Life expectancy trends at birth (1960–2010). *Source:* Data from OECD.StatsExtract. Available at: <http://stats.oecd.org/Index.aspx>, accessed September 2016

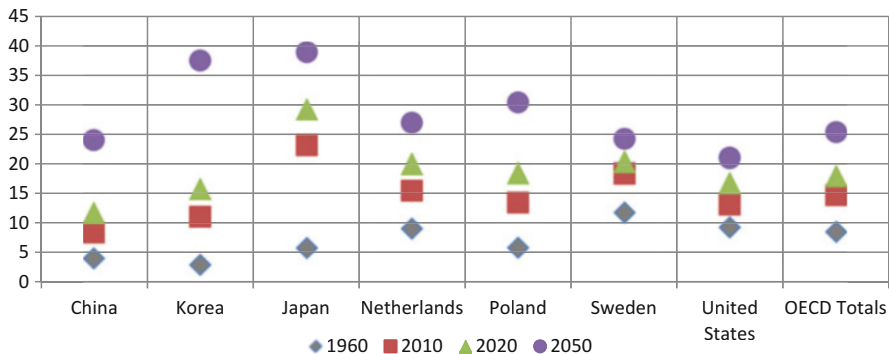
### 1.1.3 Population Structure Shows Dwindling Youth and Population Ageing

Declining fertility rates and increases in life expectancy have meant there has been a profound impact on the population structure of countries across the world. Generally, youth (aged less than 15 years) population rates have been declining since the 1960s, and in some countries this decline is expected to continue until 2050 as a consequence of declining fertility rates. All of the case study countries have experienced dwindling youth proportions (Fig. 1.7), the most significant of which were between 1960 and 2010, with a 26.2 percentage-points drop in Korea, followed by China (−21.5 percentage-points) and Poland (−18.2 percentage-points). However, in 2010, United States had the highest proportion of youth (19.8%), followed by the China (18.1%) and the Netherlands (17.5%). As can be seen in Fig. 1.7, from 2010 to 2050 it is expected that Sweden’s youth population will stabilised. The youth are these countries’ future labour force, therefore, the consequences of dwindling youth rates impact the socio-economic fabric of these countries’ futures. The importance of family policy, supporting family-friendly environments and workplaces, could be encouraged.

As a result of increasing life expectancy rates, the proportion of the population over 65 years has increased, resulting in an ageing population phenomenon. By 2050, according to HelpAge International (2013), older people (aged 60 years and over) will make up more than one-fifth of the global population. Asia according to ADB (2017) is expected to become one of the oldest regions in world in the next few decades. All of the case study countries’ populations are ageing (Fig. 1.8), in 1960, Korea and China had the lowest proportions of elderly population (2.9% and 4.0% respectively). Sweden, in 1960, had the highest elderly population proportion at 11.8%. In 2010, China still had the lowest proportion, with 8.4% falling into the elderly category; however, Japan has the highest proportion, at 23.0%, followed by



**Fig. 1.7** Youth (less than 15 years old) population levels (1960–2050). *Source:* Data from OECD. StatsExtract. Available at: <http://stats.oecd.org/Index.aspx>, accessed April 2017



**Fig. 1.8** Elderly population (over 65), 1960–2050. *Source:* Data from OECD.StatsExtract. Available at: <http://stats.oecd.org/Index.aspx>, accessed April 2017

Sweden (18.3%). By 2050, Japan’s elderly population will make up almost 40% of its population, followed by Korea (37.4%) and Poland (30.3%). From 2010 to 2050, Korea, Poland, Japan and China will have the fastest growing elderly populations (26.4, 16.9, 15.8 and 15.6 percentage-points respectively). By 2050, the United States, China, Sweden and the Netherlands will have the smallest elderly population rates, but these are still a significant 20.9%, 23.9%, 24.1% and 26.9% respectively. Population ageing is having, and will cause, many challenges to societies and economies, resulting in changes in labour markets, societal structures and social security systems (Cedefop 2012). In Asia, younger Asian countries could strive to capitalise on their young workforce through the creation of job opportunities through active labour-market policies and vocational training. While the middle- and advanced Asian ageing countries could focus on physical and human capital as important growth drivers and structural reforms such as retraining programs and flexible working arrangements to postpone retirement (ADB 2011).

### 1.1.4 Increasing Longevity Requires Age Management for all Countries

Many demographic trends in the case study regions are specifically related to the ageing of the population, which is creating challenges for the national and regional economies. There is an increasing concern regarding workforce ageing and the need for products and services for seniors. Long-term care systems, support of non-government organisations, creation of new leisure and business services and products, as well as provision of opportunities for entrepreneurship and small and medium enterprise (SME) development, are all policy considerations for active ageing. In order to get insight in these processes and to monitor evolving trends adequate statistical information is needed and this needs to be presented in a way



which is suitable for policy purposes. Currently, there are two ageing indexes to assist national policy makers in identifying gaps and policy response:

- Active Ageing Index (AAI), for Europe only
- Global AgeWatch Index.

The AAI was developed in the context of the European Active Ageing and Solidarity between Generations, 2012 by the European Centre for Social Welfare Policy and Research in Vienna. “The AAI is a new analytical tool that aims to help policy makers in developing policies for active and healthy ageing. Its aim is to point to the untapped potential of older people for more active participation in employment, in social life and for independent living. Mobilising the potential of both older women and men is crucial to ensure prosperity for all generations in ageing societies” (European Commission and United Nations Economic Commission for Europe 2013). The AAI project is now managed jointly by the European Commission’s Directorate General for Employment, Social Affairs and Inclusion (DG EMPL), and the Population Unit of the United Nations Economic Commission for Europe (UNECE).

### **Box 1.1 Active Ageing Index**

The Active Ageing Index (AAI) was constructed from four different domains, with each domain presenting a different aspect of active and healthy ageing. The first three domains refer to the actual experiences of active ageing (employment, unpaid work/social participation, independent living), while the fourth domain captures the capacity for active ageing as determined by individual characteristics and environmental factors. The AAI is a composite index, which means that a number of individual indicators contribute to each of the domains. In total there are 22 individual indicators across 4 domains. Each individual indicator can be positively interpreted, meaning that the higher the indicator value, the better the active ageing outcome. For example, the more care older people provide for others, the better are their active ageing outcomes. Indicators are weighted individually and then combined within the four domains, thus creating the domain-specific indices. The overall AAI is then the weighted average of the four domain-specific indices. The results of the AAI are presented as a ranking of countries by the scores achieved in the overall AAI and in the domain-specific indices. The rank order of countries differs across domains. The rank of each country in the AAI is determined by the score it obtains in the four domains and in the overall index. Individual country scores show the extent to which its older people’s potential is used and the extent to which they are enabled to participate in the economy and society. The theoretical maximum for the index is assumed to be 100. Currently, none of the countries comes anywhere near this maximum. If this was the case, it would indeed imply a much higher

(continued)

**Box 1.1** (continued)

life expectancy and an unrealistically high participation of older people in the economy and society. Thus, the index is constructed in such a way that even the best-performing countries cannot reach the ceiling of 100. As a result of this methodological choice, current top performers like Sweden or Denmark only pass the 40% mark. Improvements are possible even for the top performers, but obviously, 100 would not be a realistic goalpost at present.

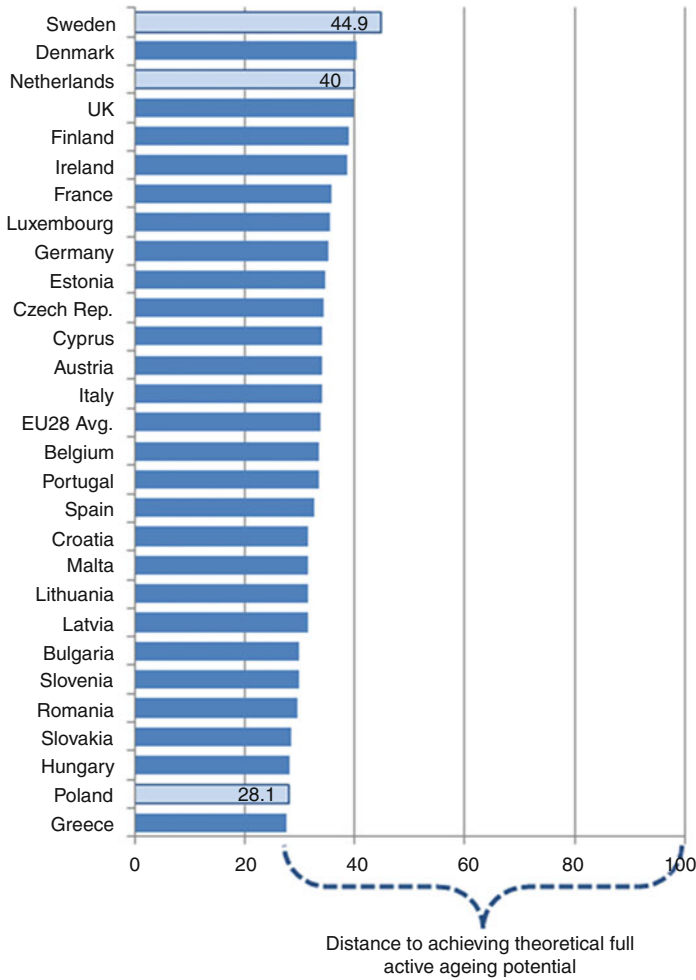
*Source:* European Commission and United Nations Economic Commission for Europe (2013), “Policy brief: Introducing the Active Ageing Index”, March, [https://ec.europa.eu/eip/ageing/sites/eipaha/files/library/514c3a35bfc71\\_Policy%2Bbrief%2BFinal%2BMarch%2B2013%5B2%5D.pdf](https://ec.europa.eu/eip/ageing/sites/eipaha/files/library/514c3a35bfc71_Policy%2Bbrief%2BFinal%2BMarch%2B2013%5B2%5D.pdf).

Currently, the AAI is completed for European countries; below is a summary of the results for the Netherlands, Poland and Sweden. As outlined in Box 1.1, results are presented as a ranking of countries by scores achieved. According to the Active Ageing Index, overall, Sweden ranks 1st out of the EU28, the Netherlands ranks 3rd, and Poland 27th (Fig. 1.9). Within specific component indices:

- Employment: Sweden ranks 1st, followed by the Netherlands (6th), and Poland (20th);
- Participation in society: Sweden is ranked 3rd, followed by the Netherlands (5th), and Poland (28th);
- Independent living: the Netherlands ranked 3rd, followed by Sweden (4th) and Poland (24th);
- Capacity for active ageing: Sweden ranks 1st, followed by the Netherlands (4th), and Poland (22nd).

The scores for theoretical potential for full active ageing engagement of people working, or providing skills inputs, reveals the potential for improvement and the need for policy focus (Fig. 1.9). Although Sweden is ranked first overall, its score was 44.9%, therefore, improvements are possible and could be encouraged and not be underestimated. The Netherlands’ score was 40.0%, which would make it possible to achieve an improved economy, with increased aged productivity and lower healthcare costs. Thus, policy efforts need to be directed towards this end, in areas such as workplace activation, volunteerism and long-life learning. Poland’s score was 28.1% of the theoretical potential. Policy efforts need to be directed towards this end, in areas such as encouraging healthy and active communities, inter-generational solidarity, managing the ageing workforce, and skills and competency development.

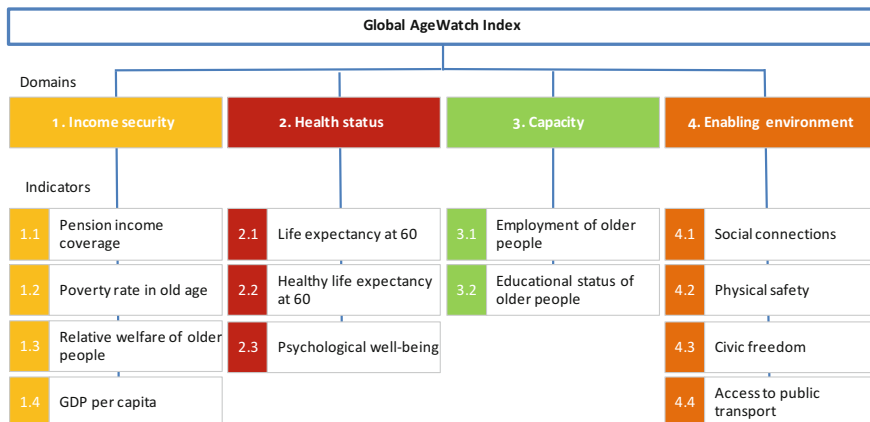
The AAI highlights the national differences between countries and the challenges of ageing populations in society. Policy focus, no matter how advanced a



**Fig. 1.9** Active Ageing Index results across EU28 countries. *Source:* Data from UNECE and European Commission (2015) *Active Ageing Index 2014: Analytical Report*, Report prepared by Asghar Azidi of Centre for Research on Ageing, University of Southampton and David Stanton, under contract with United Nations Economic Commission for Europe (Geneva), co-funded by European Commission’s Directorate General for Employment, Social Affairs and Inclusion (Brussels)

country is, could continually encourage inter-generational solidarity, management practices for an ageing workforce, lifelong learning, and inclusive and resilient communities.

In addition to the AAI which is limited to European countries, the newly launched Global AgeWatch Index covers countries from all over the world. It is supported by international organisations such as the World Bank, the World Health Organisation (WHO), the International Labour Organisation (ILO) and the United Nations Educational, Scientific and Cultural Organisation (UNESCO). The Global



**Fig. 1.10** Global AgeWatch Index domains and indicators. *Source:* HelpAge International (2015), *Global AgeWatch Index 2015: Insight report*, HelpAge International, London

**Table 1.1** Global AgeWatch Index: Case study country results

	Overall rank and value		Income security		Health status		Capability		Enabling environment	
	Rank	Value	Rank	Value	Rank	Value	Rank	Value	Rank	Value
Sweden	3	84.4	7	83.5	12	75.2	5	65.6	6	79.4
Netherlands	6	83	5	85.9	13	74.8	12	59.6	5	76.6
Japan	8	80.8	33	75.1	1	83.9	7	62.7	21	75
United States	9	79.3	29	76.3	25	70.1	4	65.7	17	76.8
Poland	32	57.4	26	77.6	48	55.3	52	31.1	37	69.2
China	52	48.7	75	39.2	58	46.5	39	37.8	28	71.8
South Korea	60	44	82	24.7	42	58.2	26	47.6	54	64.1

*Note:* The value shows how near a country is to the ideal value (100)

*Source:* data from HelpAge International (2015), *Global AgeWatch Index 2015: Insight report*, HelpAge International, London.

AgeWatch aims to “... capture the multi-dimensional nature of well-being and quality of life of older people, and to provide a means by which to measure performance and promote improvement” (HelpAge International 2013: 12). The index contains 4 key domains (income security, health status, employment and education, and enabling environment) under which 13 indicators are utilised (Fig. 1.10). According to HelpAge International (2013), the “...overall index is calculated as a geometric mean of the four domains.”

The index results illustrate that Nordic, Western European, North American and some Asian and Latin American countries fare the best in well-being and quality of life for older people. Sweden again tops the index and features in the top 10 of all four domains. Table 1.1 outlines the case study countries’ overall and domain ranking, highlighting possible gaps and scope for progress in older peoples’ well-being.

Box 1.2 outlines the key conclusions from the 2013 and 2015 Indexes about how countries are responding to the challenges and opportunities of population ageing.

### **Box 1.2 Global AgeWatch Index: Key Findings**

#### Key Finding from 2013 Index:

- Money is not everything. A number of low-income countries have shown that limited resources do not have to be a barrier to providing [care] for their older citizens. Examples include non-contributory basic pensions as part of social welfare programmes or free or subsidised healthcare for older people.
- Guaranteeing the well-being of all. History counts: People in countries that have a record of progressive social welfare policies for all citizens across the life-course are more likely to reap the benefits in old age.
- Maintaining the momentum. It is never too soon to prepare: Countries are at different points on the ageing trajectory. Those that have a significant youth population can potentially benefit from a “demographic dividend”, as they have large numbers of people of prime working age.
- Addressing the data challenge. Ageing requires action: The most urgent concerns for older people worldwide are a guarantee of income security and access to affordable healthcare.

#### Key Finding from 2015 Index:

- Inequality is increasing: Inequality in health, education and income levels of older people is increasing between top-ranked, high-income countries and bottom-ranked, predominantly low-income countries.
- Success means building independence. The countries doing best in the Index have social and economic policies supporting older people’s capabilities, wellbeing and autonomy and do not rely on families to support their relatives alone. They have long-standing social welfare policies delivering universal pensions and better access to healthcare, as well as action plans on ageing.
- Ageing in BRICS countries. Among the BRICS group (Brazil, Russia, India, China, South Africa), China is a rapidly ageing country—over 15% of the population are 60 and over—that is proactively and strategically responding to demographic change. The Rural Social Pension Scheme introduced in 2009 resulted in 89 million people receiving pension payments for the first time. Combined with those receiving payments under other pension schemes, this means that 125 million people now receive a monthly pension. In 2013, a national law was amended to protect the rights of older people, mandating local governments to provide social security, medical and long-term care to their older citizens. China increased pension

(continued)

**Box 1.2** (continued)

and health insurance coverage, encouraged volunteers to care for their elders and invested in community centres for older people.

- Austerity measures hitting older people in Europe and North Africa. The 2008 financial crisis affected pensions across Europe. In 2009, Poland reduced the number of people eligible for early retirement from 1.53 million to 860,000, and pension levels are set to decline from 51% of average wages to 26%.
- A better world for all ages. The third report shows that creating a better world for all ages is within reach. Policies and programmes can protect and promote human rights as we age, leading to the end of all forms of discrimination, violence and abuse in older age. To secure incomes, it is vital to advance the right to social security in old age, by ensuring universal pension coverage. To keep people in the best possible health, and increase healthy life expectancy, everyone needs access to good quality healthcare that is appropriate and affordable across their lifetime.

*Sources:* HelpAge International (2013), *Global AgeWatch Index 2013: Insight report*, HelpAge International, London; and HelpAge International (2015), *Global AgeWatch Index 2015: Insight report*, HelpAge International, London.

The demographic trends outlined in this chapter show that population shrinkage or stagnation is already either being experienced or is projected to occur in the near future. Declining fertility rates and increases in life expectancy have meant there has been a profound impact on the population structure of countries across the world. These trends highlight a number of unresolved policy issues at the national, but certainly also at the local and regional level that will be studied in detail in the following chapters.

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## Chapter 2

# Cities, Regions and Population Decline

Philip McCann

This chapter outlines some of the key themes linking demographic change and population ageing to the long run prosperity of cities and regions. The chapter develops a particular focus on the long-run local economic impact of declines in the local working age population relative to the older non-working age cohorts, declines which are the most severe in situations of overall absolute population decline. The various dimensions of local long run economic viability in the face of population ageing and decline include the ability to provide age-related health and social care services, the long run needs for redesigning the local built environment, and the financial underpinnings of the local fiscal position. Many of these issues have been largely ignored by the academic literature within urban economics and regional science, and much more theoretical as well as empirical research is urgently required, given the fact that so many OECD nations, regions and cities are now facing these real challenges. In order to discuss these issues, the rest of the chapter is organized as follows. The next section outlines the major links between population ageing and population decline at the national level drawing on evidence from across the OECD and the European Union. We then examine these issues at the level of cities and regions, and it becomes clear that there are various differences between these interrelationships at the local level and at the national levels. In particular, the differences in these features at the urban and regional levels are seen to be greater than at the national level, with more diverse combinations of ageing and migration operating at the regional and city levels than are observed nationally. Indeed, it is the interrelationships between migration, ageing and the accumulation or depletion of local human capital flows, which is key to understanding these issues at the local and regional levels. On the basis of these arguments, we then proceed to outline the various urban policy challenges and opportunities associated

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with these demographic shifts. These centre on environmental, housing and transport issues, and are generally understood as being a combination of the compact city and smart city agendas.

## 2.1 National Population Ageing and Population Decline

The demographic changes which many societies are currently undergoing represent powerful forces which will fundamentally reshape the nature and structure of our societies. The two most powerful forces are the ageing of society, a force which is affecting almost every country, and in many countries also the decline of populations are also observed alongside population ageing (European Union 2015). Moreover, in the case of shrinking populations, there are actually two different types of population decline, which can affect societies and economies in rather different ways. One type is that of absolute population decline, and the second type is that declines in the working age population relative to the older non-working age population. These two trends may go hand in hand, but this is not always the case, and understanding these interrelationships is essential in order to understand the likely long-run implications of these trends. In particular, understanding the relationships between national demographic trends and the trends operating at the level of cities and regions is crucial in order to consider the long run developmental and fiscal impacts of these trends.

There are noticeable differences in the age profile of different countries (European Union 2015). Globally, the oldest average age populations are in Japan (43), Italy and Germany (both with 41), followed by 24 other European countries with average age ranges between 40 and 38 (MGI 2016). Canada, Taiwan, Norway, Slovakia, Australia, the USA, Ireland and South Korea are all slightly more youthful than other OECD countries, with average ages ranging between 37 and 34 (MGI 2016). Meanwhile, with average ages of 30 or below, populations in less developed countries such as Mexico, Brazil and India tend to be on average younger than more developed countries, except for the cases of China and Russia with average ages of 36 years (MGI 2016). Yet, at the same time as we observe different national average age profiles, we also observe different national population trajectories. Broadly speaking, countries with older populations are more likely also to be facing population decline. Countries such as Germany, Italy, Japan, Spain and Portugal plus almost all of the Eastern European former-transition economies are already facing national population decline and as a result, so are many of their constituent regions and cities. Other countries such as The Netherlands and Poland are not quite facing national population decline yet but population decline is already evident in many regions and national population growth is plateauing and will soon begin to decline. Indeed, without the recent rise in immigration during the last two decades even countries such as the UK would also be facing national and regional population decline in particular places.

In general, however, problems of population ageing combined with population decline are primarily a problem facing various advanced economies such as Japan, Italy, Ireland, Portugal, Denmark, Germany and Spain, while amongst other advanced economies population ageing and population growth are still features of most of the English-speaking countries along with some of the Nordic countries. As a whole, these trends imply that the working age population of the EU (including the UK) is forecast to fall by some 6% by 2030 (The Economist 2015a), yet as we have already indicated these aggregate population figures also hide marked variations. By 2030 the working age population will fall by something of the order of 12% in Germany, Spain and Portugal, by 4% and 7% in Netherlands and Ireland, respectively, whereas it will grow by 8% and 2.3% in Sweden and the UK, respectively. During the same period, in France and Italy the working age population will remain almost unchanged (The Economist 2015a). As such, across Europe, there will be major differences in population growth and ageing between different countries, with the balance between the local working age population and the local older non-working age cohorts shifting rapidly in many countries. Demographic ageing which increases the old-age dependency ratio also increases the age-related public expenditure on services for elderly, which are forecast to increase by 4.1% of GDP across the EU and by 4.5% of GDP across the Eurozone by 2030 (OECD 2015a). Even the tax revenues in countries such as the UK which is experiencing population growth due to immigration are expected to fall because older people have higher tax exemptions (OECD 2015a), and changing these exemptions is likely to become increasingly difficult as their share of the population increases.

## 2.2 Demographic Transitions of Cities and Regions

The OECD-wide national age-profiles and ageing patterns, however, also hide more complex underlying demographic mechanisms, the most important of which are differential rates of population decline and population ageing at the city and regional levels (The Economist 2015b). A growing share of the global population are now resident in cities, and urban growth is also observed at the levels of both the OECD and the EU (OECD 2015b). Currently some 56% of the OECD population currently live in urban regions, while metropolitan urban areas of over 500,000 people account for 47.9% of the OECD population (OECD 2015b). Across all of the 275 OECD metropolitan urban areas of over 500,000 people the population profile will alter enormously during the coming decades change because the share of the urban population over 65 year old will increase significantly, and amongst this group those who are over 80 years old will increase the fastest (OECD 2015a). Already, the share of over 65s quadrupled between 1950 and 2010 while that of over-80 increased 14-fold, and these rates of change are expected to increase even further (OECD 2015a). Metropolitan areas are slightly younger than non-metropolitan areas, having on average have a 0.8% lower share of older people than the national average, although metropolitan areas have an ageing rate of 23.8%

(2001–2011) which is more than 25% faster than non-metropolitan areas whose ageing rate is 18.2% (OECD 2015a). Indeed, between 2001 and 2011 within all OECD metropolitan areas the older age population has increased by 23.8%, and this is three times faster than the overall metropolitan area population growth rate of 8.8% (OECD 2015a). While rural areas and smaller towns tend to have higher shares of older people, urban areas including large cities are ageing more rapidly (OECD 2015a). Large cities therefore play an important role in the geography of demographic change, and given their shares of the population and also their spatial morphology, interest in the role that large cities can play in addressing the challenges of population ageing is one of the issues underpinning the renewed interest in compact cities (OECD 2012a).

The processes of population ageing, slowing population growth and even population decline in cities and regions are due to a variety of different mechanisms, of which national population decline is just one determinant. The demographic ageing and population decline trajectories experienced by many cities and regions over recent years are in part related to national trends as well as to local conditions, and differential national population changes have heavily contributed to global changes in urban demographic trends. Since the new Millennium some 60% of the economic growth of large cities has been due to population growth, while some 40% has been due to per capita income growth (MGI 2016). Yet, these trends are now displaying a marked slowdown. Global urbanization rates are slowing down in all parts of the world due to increased ageing and the slowing down of rural-urban migration flows, such that while the overall global urban population is still increasing, it is doing so at a noticeably slower rate than in the previous decades (MGI 2016). Population ageing and lower fertility means that total global urban population level is expected to plateau sometime towards 2035 while the share of the urban population which is older than 65 is expected to increase at an increasing rate, reaching between 20% and 25% in developed countries by 2025 (MGI 2016). In contrast, in many developing countries these older-cohort shares are expected to be much lower for the coming decades (MGI 2016).

As already mentioned, in cities or regions where the size of the older age non-working cohort is growing relative to that of the local working-age population, the relative costs of the local provision of health and social care public services will be increasing. Moreover, these increases will be at precisely the same time as the potential revenues which can be locally generated to provide such services will be falling. Today, these adverse demographic shifts, whereby the size of the local economically active population is falling relative to the size of the local older dependent population, are evident in slowly-growing cities, but they are most marked in cities and regions facing absolute population decline. The reason is that as well as changes in household size and composition, one of the key drivers of population decline in the economically-active age cohorts, is out-migration. Out-migration tends to be higher in economically weaker cities. Moreover, out-migration is also dominated by the more highly-skilled and younger cohorts, so the greater are the local population outflows, the lower will be the local human capital base and also the more rapidly will the remaining population be ageing. This

is a toxic demographic combination. In contrast, cities experiencing the in-migration of younger and more highly skilled cohorts, tend to also experience a growth in their local human capital base and a local population which is ageing much more slowly. These are relatively benign demographics, and are typical of many prosperous and global cities. In addition, some rural areas face population ageing and a declining local economic base due to the out-migration of younger and more educated workers, while other rural areas exhibit population ageing while experiencing population inflows of older and high net-wealth or high income households seeking high amenity locations. The effects of migration in the former group of rural areas are again toxic, whereas in the latter group of rural areas the economic injections associated with the in-migration of older cohorts means that the overall effects are less toxic, and rather more benign than in the former case. Importantly for our purposes, rural regions in general tends to exhibit population ageing relative to many urban areas, while different urban areas tend to exhibit very different population ageing and population growth trajectories.

Academic research in urban economics is almost entirely focused on growing cities. Yet, nowadays not only are there many shrinking cities facing the types of toxic demographics described above, but indeed the number of these shrinking cities will also increase in the coming decades. Since the new Millennium, 6% of the world's large cities of over 500,000 inhabitants have experienced population decline (MGI 2016) and these trends are likely to become more pronounced, especially in rich countries. Some 17% of the large cities in advanced economies are expected to face population decline by 2025 while 61% of large cities in the developed regions will face declines in the number of young adults (MGI 2016). However, across the developed world these demographic patterns are uneven. One-third of Europe's large cities were facing population decline prior to the 2008 global financial crisis, and this share is now slowly increasing with cities in Southern and Eastern Europe being especially vulnerable to these trends (MGI 2016). Meanwhile, almost half of Japan's large cities are facing population decline while population decline amongst US cities is more less evident, and is largely confined to cities in the older 'rustbelt' industrial areas of the Mid-West and the North East. As a whole, the population of the USA is still growing relatively rapidly, and annual US urbanization rates are still more than double what they are in Europe (MGI 2016).

This issue of differential out-migration and in-migration also has other spatial-demographic implications. The larger the country, then in general the greater is the range of alternative opportunities for interregional migration. As such, as well as differences between countries, there are also significant variations in ageing profiles within countries. The age profiles of different cities within countries can vary enormously, and in general these differences tend to be larger in large population countries than in small population countries. In the USA the range of average age profiles of different cities spans 21 year age differences (MGI 2016), in China it is 12 years, in Spain and Russia it is 10 years, 9 years in South Korea, in the UK and France the differences in average age between cities span 7 years, in Germany, Canada, Italy and Japan it is 6 years, while in small population countries such as

Sweden, The Netherlands, Belgium, Denmark, Switzerland, Hungary the age range across cities typically only spans 3 or 4 years (MGI 2016). In very small countries with populations below 5 million people, the average age range between cities is typically only 1 or 2 years (MGI 2016). Indeed, the average city age range across the whole of the EU is only 12 years, which is the same as that for China as a whole, and markedly lower than the USA (MGI 2016). These average age ranges are for cities of over 500,000 inhabitants. However, following the interregional migration arguments outlined above, if we were also to include the small towns and rural areas then the average age range for each country would increase. This is because these small town and rural areas display the highest average age profiles, and the upper age range for each country will increase markedly in the larger countries which include many such areas.

Rather than the urban level, if instead we consider the sub-urban context, then we see that on average the core central parts of OECD metropolitan urban areas display an age structure which is typically 1.1% younger than the urban hinterland areas although there are many differences between countries. Over recent decades there has been a widely observed trend for younger and more highly educated people to move into city centres, and these inflows also give rise to greater local fertility rates (EU and UN Habitat 2016), and these trends are particularly marked in capital city metropolitan regions. At the same time, across the OECD cities suburban commuting areas tend to grow faster in general than core urban areas (Veneri 2015). Differential population ageing and population at the sub-urban level can be caused by either out-migration or by sub-urbanisation, both of which in turn can be partly driven by de-industrialisation and its effects on unemployment, mobility, fertility and also the viability of the local government to provide public services (OECD 2012b). In general, at the sub-urban level, the mix of these different forces means that the rate of growth of older people in core metropolitan urban areas tends to be higher in larger cities, as relatively fewer of these older age cohorts leave the central city locations, whereas the growth of older people in the hinterland areas tends to be highest in medium sized cities for the same reasons (OECD 2015a). However, the latter effect is more pronounced than the former effects. The result is that across the OECD 275 metropolitan urban areas with over 500,000 inhabitants the hinterland population growth of older people—at 28.3%—outpaced that of the core metropolitan areas of 22.6% by more than one quarter between 2001–2011 (OECD 2015a). This is the broad OECD-wide picture, with larger cities ageing relatively more slowly than smaller towns and rural regions, and with large city centres ageing more slowly than hinterlands. On the other hand, however, in Mediterranean cities inner-city populations are generally older than suburban populations (OECD 2015a), suggesting that the demographic geography of these cities display rather different characteristics to those more typical of northern Europe and the rest of the OECD.

As well as population ageing, population growth and population decline at both the urban and sub-urban levels, we also observe age-related changes in household formation and household composition patterns. In many OECD countries more than 20–35% of people aged over 65 are now living alone, and therefore appropriate

housing as well as accessibility to services and infrastructure become increasingly important for an ageing society (OECD 2015a). Meanwhile, some 76% of older people across the OECD own their own homes including those still paying mortgages, with 15% being tenants and 9% paying subsidised rents (OECD 2015a). Indeed, in many OECD countries such as the UK, older age groups tend to be wealthier on average than younger age groups because housing is the major store of wealth. On the other hand, some parts of Europe are rather different to other parts of the OECD, with many of Europe's richest countries exhibiting home-ownership levels well below the OECD average and also displaying the lowest shares of home ownership amongst the elderly (OECD 2015a). Therefore, simple typologies which assume that older people generally hold greater housing wealth and typically in suburban areas, do not reflect the variety of patterns evident across the OECD regarding age-related sub-urban location patterns and household age-related wealth holdings. This also implies that there are likely to be no simple 'off-the-shelf' or 'one-size-fits-all' urban policy solutions aimed at fostering prosperity and economic viability in the context of population ageing and population decline, which are applicable in all cases. In all likelihood policy actions will need to be tailored to the context.

### 2.3 Policy Challenges, Actions and Options

Standard discussions in politics and media regarding the public policy challenges associated with societal ageing tend to focus on increasing the pension age, which in most OECD countries is currently expected to increase in the short to medium term from 65 to 67 years of age. Given that many wage structures depend on overall career progression paths, Mincer (1974) type equations (Heckman et al. 2003) suggest that the marginal productivity of retirement age workers is often very low after netting out their current wages, relative to much younger workers, whose marginal productivity tends to be relatively much higher than their current wages. In the face of accelerating marginal demographic change around the current retirement age, small increases in the retirement age are therefore unlikely in many cases to be sufficient to ensure that pensions remain at current or previous levels. Indeed, ongoing demographic change involving both ageing and relative declines in the working age population suggest that the pensionable age will need to be increasingly pushed up over coming decades. Yet, the efficacy of increasing the retirement age by just a couple of years, as is widely advocated in many countries, is primarily a product of the fact that this is politically feasible within the timeframe of short electoral cycles, whereas larger pension-age increases become largely infeasible in current climate, even though the marginal productivity of many retirement age workers is so low. In the long-run, however, ongoing and indeed accelerating demographic change means that in reality larger pension-age increases may eventually be needed in many contexts, allied with policy interventions which are aimed at increasing the marginal productivity of older workers (Munnell and Sass 2008).

These pension-age headline types of discussions, however, hide many of the more subtle and difficult aspects of demographic change which relate variously both to the specifics of demographic profiles and also the geographical features of these changes. In particular, the ability of a region or city to provide for its ageing population depends crucially on the balance between the size of the local post-working age cohorts and the size and dynamism of the local younger working-age cohorts. The issues relating to the long term provision and funding of age-related local public services, public goods and public infrastructure become both complex and differentiated according to the geography-demography intersection. Cities or regions with a dynamic and youthful local labour force will generally be better equipped to provide age-related social and healthcare services than regions facing out-migration of the young and highly educated. Yet, these demographic and ageing-related interregional differences also pose fundamental challenges to the movements towards greater governance devolution and decentralisation which are nowadays evident in many countries. It is well known that the relationship between governance decentralisation and economic growth is rather weak (Ezcurra and Rodriguez-Pose 2013), although there is much stronger evidence that regional inequalities tend to be lower in more decentralised (Ezcurra and Pasqual 2008) and higher quality (Ezcurra and Rodriguez-Pose 2014) political and governance systems. Civic engagement also tends to be higher in more decentralised societies. Yet, an Achilles Heel in the widespread place-based policy momentum which is building in many countries and which is aimed at increasing the decision-making power and autonomy of local, city and regional actors, is that markedly different inter-city or inter-regional demographics can also hinder or even undermine the long term fiscal viability of devolution. The reason is that there will be major asymmetries in terms of the geography of long-term ageing-related service-provision costs and also the long-term underlying financial and fiscal liabilities (Carbonaro et al. 2016), which will put enormous pressure on the national pooling of risks. These local financial pressures will be especially strong in localities where demographic ageing is also associated with population decline and also falling household sizes. Larger numbers of elderly citizens are living alone nowadays and these new household formation patterns also pose challenges in terms of both health and social care-related service provision and also new modes of urban design.

Obviously, in each case the specific impacts of population change on local areas will differ according to the type of location, the needs of the population, and the existing demographic structures (OECD 2012a). However, in general, ageing population and smaller households will require changes in infrastructure provision, changes in urban design and development, and changes in the provision of services, with policies increasingly focusing on quality of life and wellbeing issues (OECD 2015a). Providing for these older age groups as well as younger smaller household groups also poses different architectural and infrastructure re-design challenges at different spatial scales, ranging from metropolitan-wide urban transport systems, to city health infrastructure, to neighbourhood level retail provision, all the way down to the re-design of individual streets and houses. The challenges associated with providing tailored public services for older age cohorts and the appropriate redesign

of housing and public infrastructure facilities also depends on the financial resources of older age groups, and here age-related housing affordability is an important issue. In principle these challenges will be relatively greater in societies and regions in which older age groups are relatively poorer than younger age groups while they ought to be relatively easier to address in societies or localities where older age groups are in general wealthier than younger age groups, because of the greater ability of the older age groups to access alternative resources and services. However, across countries and regions these patterns also heavily depends on the form of housing tenure enjoyed by the occupants.

The compact city logic (OECD 2012b) is emerging as a key theme in finding ways to address these ageing-related challenges, and in particular in its ability to facilitate a so-called ‘smart city’ agenda. Although originally emanating from planning and environmental arenas, many of the compact city actions increasingly involve ‘smart growth’ (Ingram and Hong 2009) types of agendas, whereby new technologies in areas such as health, energy, mobility, and communications are integrated and trialed within more experimentalist approaches to urban policy schemes. These pilot actions and interventions also involve modern forms of monitoring, evaluation and analysis in order to track the progress of such policy experiments (Ruth 2015). Indeed, demographic change not only provides excellent opportunities for such a policy logic, but indeed it requires such approaches, given that so many of these challenges are new and emerging, and involve the adding of layers of complexity to policy arenas not previously experienced in the earlier eras of overall population growth.

The need for smart policy innovation focused on the elderly cohorts in a compact city setting tends to aim at two principal sets of priorities, namely enhancing spatial mobility and social engagement. Enhancing both spatial mobility and social engagement is essential in order to foster healthy living amongst elderly cohorts, but realising these aspirations and ambitions is also contingent on other built-environment features. In particular, providing for the spatial mobility and engagement possibilities for these older age groups along with their desire as far as possible for independent living is very much also contingent on other wealth-related matters. If ways can be found to unlock the wealth tied up in housing assets, via for example systems of re-financing, this will make the provision of services for older age groups relatively easier to provide. However, other alternative mechanisms, such as capturing some of the non-earned spillover effects of local house price rises via taxation, raise sufficiently complex and contentious political economy considerations that such approaches are often eschewed by decision makers, even though they could capture enormous benefits for the local communities.

The success of many social innovations at fostering greater social engagement are critically dependent on the ability to enhance local stakeholder engagement in local policy-making. As such, finding ways to improve the engagement of older people in employment, voluntary and community activities is essential in order both to promote policy-related benefits as well as helping to overcome social isolation (OECD 2012a). Even fostering entrepreneurship amongst the elderly is also a potential option, including the provision of specialist sources of finance



(OECD 2012a), although as yet this is a very under-researched area. Yet, whichever schemes or technologies are prioritised, in order to encourage ageing-related technical, infrastructural and social innovations it is also essential to raise awareness of the nature and scale of the local ageing and demographic issues, so that public awareness can begin to act as a catalyst for spurring a policy agenda (OECD 2012a).

## 2.4 Conclusions

This chapter has examined the impact of population ageing and demographic decline on cities and regions across the OECD and European Union. The inter-relationship between local economic development and demographic transitions are seen to be far more complex at the local level than at the national levels, because of the differential impacts of migration on the supply of local human capital. The different regional demographic trajectories imply very different long run fiscal futures for regions and cities and these differences pose real challenges for devolution agendas. At the same time, the demographic challenges also lead to opportunities for urban redesign approaches, centering on the compact city and smart city programmes. Many of these issues have been largely ignored in the urban economics and regional science literatures, and much more work on these issues is urgently required.

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# Chapter 3

## Regional Approaches to Demographic Change in Poland

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### 3.1 Demographic Changes in Poland

*The analysis in Poland was conducted in the regions of Pomorskie, Łódzkie and Małopolska (Fig. 3.1) with the aim of providing guidance on “how to prevent” as well as “how to deal with” an ageing society. The demographic situation in Poland is changing significantly, with each of the study regions facing different and unique challenges in their development, but some common challenges as well:*

- low fertility rates
- population ageing, changes to population structure by age, and life expectancy
- internal and external migration
- population growth/decline.

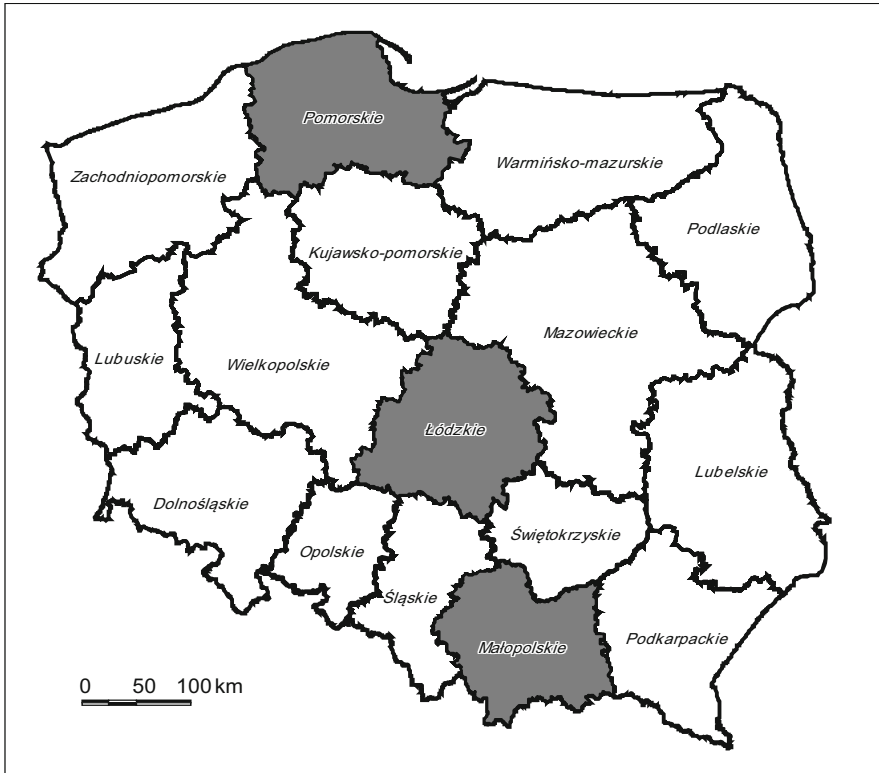
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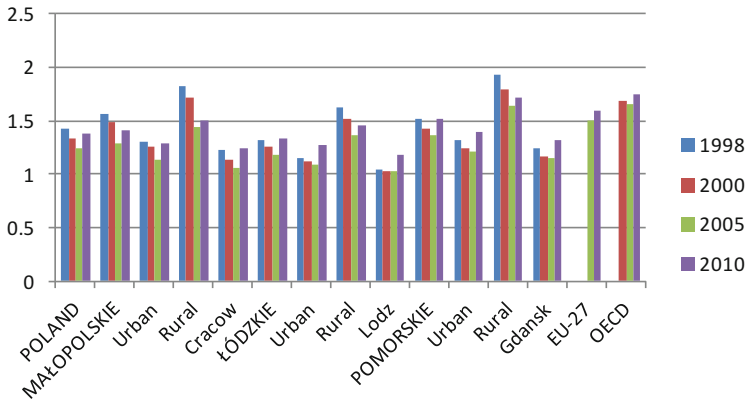


**Fig. 3.1** Map of the Polish study regions. *Note:* This map is for illustrative purposes and is without prejudice to the status of or sovereignty over any territory covered by this map. *Source:* Martinez-Fernandez, C., et al. (2013), “Demographic transition and an ageing society: Implications for local labour markets in Poland”, *OECD Local Economic and Employment Development (LEED) Working Papers*, No. 2013/08, OECD Publishing, Paris. Doi:[10.1787/5k47xj1js027-en](https://doi.org/10.1787/5k47xj1js027-en)

### 3.1.1 Fertility

The fertility rate has remained below the replacement rate level for the last two decades, which is a common trend within the three study regions and at the national level, with distinctions across urban and rural areas and in the capitals of the regions analysed (Fig. 3.2).

However, some regions are in a better position than the others. Pomorskie and Małopolskie are in a better situation than Łódzkie, although their fertility rates remain at a low level. This is because the territories of these two regions contain areas that, within the last decade, have been characterised as having the highest fertility rates on the national scale, i.e. in the Małopolskie region: Nowy Sącz, Limanowa, Sucha Beskidzka, Nowy Targ, and Myślenice and Kaszuby in the Pomorskie region. Pomorskie is experiencing a high rural fertility rate in the



**Fig. 3.2** Polish total fertility rates compared with EU27 and the OECD (1998–2010). *Source:* Central Statistical Office of Poland. Available at: <http://stat.gov.pl/en/>. Accessed June 2012

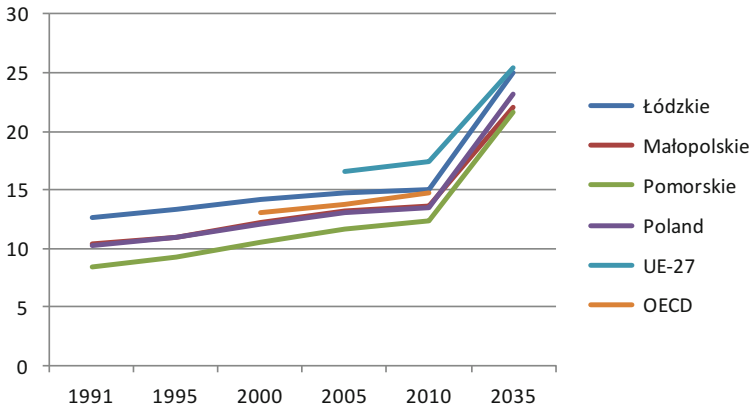
population of the northern part of the region—overall fertility rates of the rural populations of Wejherowo and Kartuszy *poviats* (districts) are close to the replacement level.

It should be emphasised that the problem of low fertility rates is especially serious in the larger cities. All three capital agglomerations of the study regions are characterised by a particularly low fertility rate over a long period of time (from at least the 1960s), and their populations reproduce at below the regional average. As indicated in OECD (2011), the challenge of low fertility tendencies needs a long-term and stable family policy supporting parenting decisions by creating the conditions to ensure that more children are born, and improving the quality of life and reducing poverty among families. Successful family policy requires state-level legislative initiatives to support regional and local efforts to reverse these negative trends.

### 3.1.2 Population Ageing and Life Expectancy

Population ageing represents common challenges due to the increase in the demand for expensive public services aimed at the elderly and to the decrease in economic vitality (human resources, incomes, individual spending and taxes). The challenges of an ageing population are also directly linked to decreasing fertility. The second main component of the process of population ageing is increasing longevity. The proportion of senior citizens in the study areas has been growing steadily and this trend will continue in the future (Fig. 3.3).

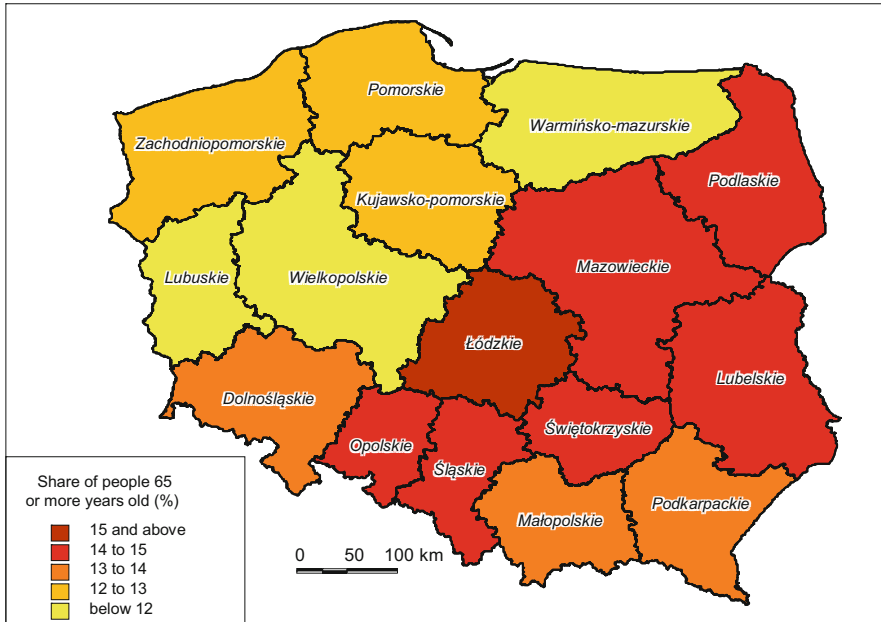
Population ageing trends vary slightly between the three regions under investigation: the Małopolska region is following a similar trend to the national one; the



**Fig. 3.3** Proportion of citizens aged 65 and over in Poland, EU27 and OECD (1991–2035). *Source:* Central Statistical Office of Poland. Available at: <http://stat.gov.pl/en/>. Accessed June 2012

Łódzkie region has a larger percentage of older persons compared to the national level; and the Pomorskie region is characterised by a lower percentage of elderly than the national trend (Fig. 3.4). This indicates that population ageing is currently the biggest problem in the Łódzkie region. Ageing in Łódzkie is a consequence of long-term low fertility and migration outflow (the first period of outflow was observed in the early 1970s in the north-western part of the region, and was related to migration to industrial cities (Konin, Płock and Włocławek). Distortions in the age structure of the population of that time affect today’s reproduction rates and accelerate population ageing, leaving the city in a situation of “shrinkage” (Martinez-Fernandez et al. 2012). Nevertheless, all the study regions are experiencing a significant rise in the ageing population and need to implement measures focused on addressing needs that are caused by the current and future population ageing process, particularly in terms of the widespread and fast increasing number and share of senior citizens.

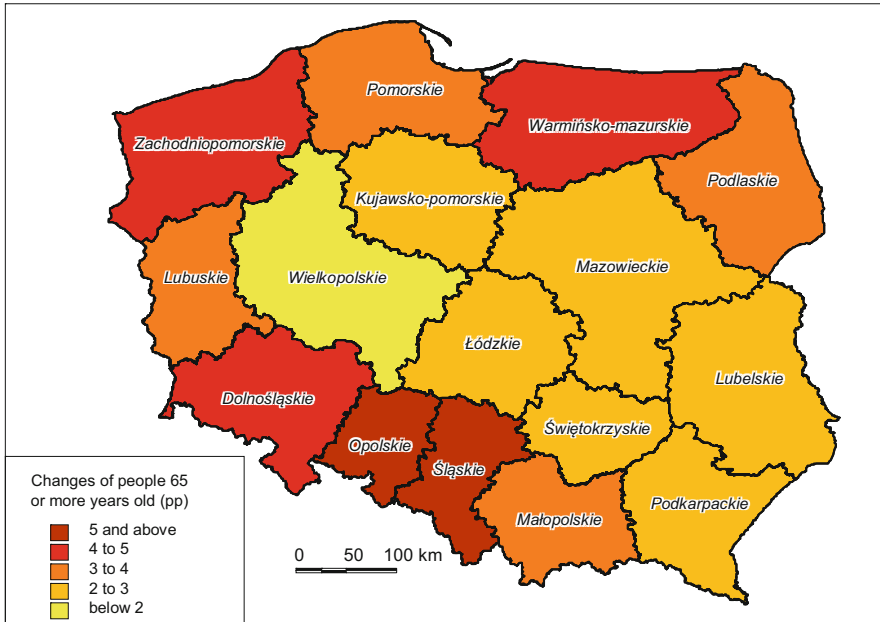
Generally, population ageing is the fastest in the south-west and northern parts of Poland (Fig. 3.5), mostly due to negative migration balance. But different factors are dominant in specific regions. Although Pomorskie is ageing faster than Łódzkie, its population is relatively stable due to high and stable fertility rates and a relatively positive migration balance. Of significance is the fact that even though Łódzkie currently has the highest percentage of older population, the other study regions have a high pace of ageing, which is very significant for those regions not only now, but also in the future. Their self-governments will be “hit” by the cohort effect if they do not, in an extremely short period, reshape their strategies and politics to include an increased demand for senior-focused public services as a basic foundation of their activities.



**Fig. 3.4** People aged 65 and over in Polish regions (2009). *Notes:* The legend refers to percent of population 65 years old and over. This map is for illustrative purposes and is without prejudice to the status of or sovereignty over any territory covered by this map. *Source:* Martinez-Fernandez, C., et al. (2013), “Demographic transition and an ageing society: Implications for local labour markets in Poland”, *OECD Local Economic and Employment Development (LEED) Working Papers*, No. 2013/08, OECD Publishing, Paris. Doi:[10.1787/5k47xj1js027-en](https://doi.org/10.1787/5k47xj1js027-en)

Within the past two decades, the death rates in the study regions show some slight differences. In the case of Małopolska, the death rate is significantly lower than the national average, which translates into a longer life expectancy in relation to the average values recorded for Poland. Moreover, the difference between the national average and the value recorded for Małopolska is more or less constant over time. In the case of Pomorskie, initially the death rate for both genders was slightly higher than the national average. However, the situation has been improving over time, and currently the death rate remains at a significantly lower level (males) or slightly lower level (females).

However, in Łódzkie, a slightly higher death rate was recorded in the early 1990s in comparison to the national average, which was then replaced by a significantly higher death rate, which mainly resulted from a high death rate among people in their prime age (i.e. aged 20–50 years old). As a result, Łódzkie is characterised by an approximately 8–10 year delay in life expectancy in relation to the national average, i.e. today’s life expectancy in the Łódzkie region was attained ca. 8–10 years ago at the national level. This position is mainly the result of its capital city being particularly neglected in terms of health and safety behaviours. The relatively



**Fig. 3.5** Changes in the ratio of people aged 65 and over in Polish regions (1991–2009). *Note:* The legend refers to percent change in the share of people over 65 years old. This map is for illustrative purposes and is without prejudice to the status of or sovereignty over any territory covered by this map. *Source:* Martinez-Fernandez, C., et al. (2013), “Demographic transition and an ageing society: Implications for local labour markets in Poland”, *OECD Local Economic and Employment Development (LEED) Working Papers*, No. 2013/08, OECD Publishing, Paris. Doi:[10.1787/5k47xj1js027-en](https://doi.org/10.1787/5k47xj1js027-en)

worse-off position of the city in terms of unemployment, lower incomes (wages, salaries and pensions), and lower education levels compared to other regions (especially within the older population, who lack the skills needed in today’s society) are also all social reasons for this neglect. People that are not educated about a healthy lifestyle and who lack financial resources are more prone to leave the responsibility for their health to “specialists” and deny the importance of lifestyle for good health. The best counteractions to this are health promotion campaigns and actions aimed at providing affordable health screening.

Population ageing is strongly associated with two other demographic processes: “feminisation” and “singularisation” of elderly population groups. Feminisation (decrease in the sex ratio due to higher male mortality rates) and singularisation (living alone and forming a one-person household) are intertwined. Most senior one-person households are formed by widows, having on average lower incomes, living in spacious apartments and as a consequence often affected by energy poverty, with very limited access to everyday support from their families and acquaintances. The phenomena creates new social environments and at the same



time, new challenges to regional and local policies to deal with this specific social structure. Local and regional authorities must be aware of the new social structure, which will be a consequence of the ageing process.

### 3.1.3 Migration

There are large differences between the regions concerning migration-related attractiveness, which may be evaluated in terms of the subjective assessment performed by potential migrants, of the living standards in the study regions (Table 3.1). In the case of internal migration, the Łódzkie region was assessed as the place of residence with the lowest attractiveness level, which was demonstrated by the continuous negative migration balance. One of the reasons for this is that Łódzkie is in close proximity to Warsaw, as a high number of emigrants from the Łódzkie region move to Mazowsze and its capital city. A solution to this problem could be creating a place to live for people with relatively high incomes (high enough to rent/buy an apartment in Łódź, but not rich enough to live in Warsaw), who have no requirement to commute daily, such as some public servants (like teachers), but also journalists and other representatives of the so-called learned professions. The two other regions were characterised by a strong force of attraction of potential settlers due to their relatively good situation in terms of labour markets and lack of a “competitor” at the regional level in their closeness.

In the case of external migrations, a growing settlement-related attractiveness of Polish regions has been observed, and among these regions, it is mainly Małopolska and Kraków that have become magnets for attracting more immigrants in comparison to the volume of emigration recorded in these regions. This is mainly because there are a lot of job/work opportunities in Kraków in various branches and sectors (including dynamic developing IT, new technologies and outsourcing businesses), which is confirmed by it having one of the lowest unemployment rates among the cities within the analysed regions. In 2011, the unemployment rate in Kraków was 4.8, in Gdańsk 5.4, in Gdynia 5.5, Sopot 4.0, while in Łódź it was 11. At the same time, in Poland this indicator equalled 12.5 (Central Statistical Office Database

**Table 3.1** Internal and external migration balance (1995–2010)

Region	Internal migration				External migration			
	1995	2000	2005	2010	1995	2000	2005	2010
Łódzkie	−1113	−1107	−1564	−1757	−59	−188	−201	−23
Małopolskie	571	2376	3153	3673	−81	−332	30	735
Pomorskie	1054	1651	2270	2749	−1427	−1233	−1197	−100
Poland	×	×	×	×	−18,223	−19,668	−12,878	−2114

Note: ×: Data is not applicable because the category does not apply

Source: Central Statistical Office of Poland. Available at: <http://stat.gov.pl/en/>. Accessed June 2012

2012). It seems that due to their improving living standards and job prospects, some regions of Poland could be characterised as having a positive external migration balance. Therefore, the regions should start developing strategies to attract immigrants and facilitate their settlement within their respective territories. It seems that such a strategy is crucial for the development of the Łódzkie region due to its less favourable demographic situation.

Effective systems of national state law are fundamental to utilise the profits from the positive external migration balance in the regional labour markets. Yet, the regions should also be prepared to confront new social problems caused by the influx of people of different nationalities. It very soon might be a daily issue of regional policy. Due to the population ageing in the next 10 years, the workforce will diminish and a shortage could be observed in a “low skills” sub-segment. Immigration could be seen as a solution but it is followed by many issues related to methods of social integration and social participation of the immigrants in Poland. Public institutions should be prepared to provide immigrants with independent social services to improve the linguistic competencies of the immigrants and their offspring.

### ***3.1.4 Population Size Changes***

The unfavourable situation in Łódzkie is most clearly demonstrated by changes in the number of inhabitants residing in the study regions within the past two decades, and related forecasts performed by Statistics Poland<sup>1</sup> (Fig. 3.6 and Table 3.2).

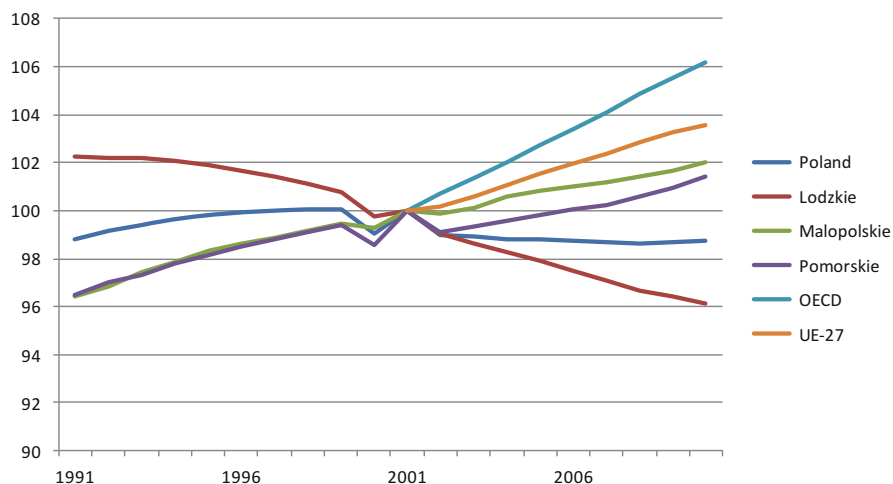
While increases in population size for Małopolskie and Pomorskie can be observed, in Łódzkie, the population size continuously declined throughout the study period. Moreover, the changes predicted in the forecast period are envisaged to be of a similar nature. While Małopolskie and Pomorskie are characterised by a small increase in the population size, the Łódzkie region is predicted to be characterised by depopulation (Table 3.2).

In summary, in a country that is homogeneous in terms of its ethnic and cultural aspects such as Poland is, and in conditions where the demographic behaviours are becoming similar, the individual regions will experience various population-based issues.

The population ageing process, which is a key issue of the analysis, is of great importance and requires that new growth drivers be “invented”, in the areas of the silver and white economies. Some of these issues will differ—health conditions measured against indirect life expectancy significantly differentiates the study regions, just like other non-demographic factors influence their settlement-related

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<sup>1</sup>This forecast was developed in 2009 for the period to 2035. Statistics Poland is currently working on developing the next version of the population forecast, which is based on the data obtained under the national census 2011.



**Fig. 3.6** Population growth/decline in Poland, EU27 and the OECD. *Note:* Year 2001 = 100; Small distortions in the early 2000s are related to statistical adjustment to the census data. *Source:* Central Statistical Office of Poland. Available at: <http://stat.gov.pl/en/>. Accessed June 2012

**Table 3.2** Population size of the study regions (2000–2035)

Region (thousands)	2000	2005	2010	2020	2035
Łódzkie	2627.8	2577.5	2541.8	2419.2	2188.0
Małopolskie	3229.1	3266.2	3298.3	3364.7	3328.7
Pomorskie	2172.3	2199.0	2230.1	2285.1	2262.8
Poland	38,254.0	38,157.1	38,167.3	37,829.9	35,993.1

*Source:* Central Statistical Office of Poland. Available at: <http://stat.gov.pl/en/>. Accessed June 2012

attractiveness. Considering the present statistics, the Łódzkie region is in the worst demographic situation: apart from the low fertility rate and high death rate, it has to cope with the “magnetic” attraction of Warsaw. This close proximity “sucks out” the young adults from the region (thus lowering the reproductive capacity of the region), as well as reducing the attractiveness of the Łódzkie region to immigrants from other countries. In the mid-1990s, there was a proposal to create a “duopolis” type functional connection between Warsaw and Łódź (where Łódź would have an auxiliary function); however, the proposal was not fulfilled and is still not in operation. A railway reconstruction and a new highway connecting Warsaw and Łódź may change the situation and transform this proximity into an opportunity, however, this transformation will probably relate to the creation of new and cheaper “bedroom” and recreation areas than to equiponderant economic co-operation.

The processes of population ageing are both the result of and the incentive for socio-economic change occurring in the country. Therefore, challenges associated with the discussed demographic trends require systemic, sustainable policy,

simultaneously conducted at all administrative levels of governance: state, regional and local. Regions should take advantage of their regional and local resources in light of their demographic transition.

## 3.2 Regional Resources for Demographic Transitions

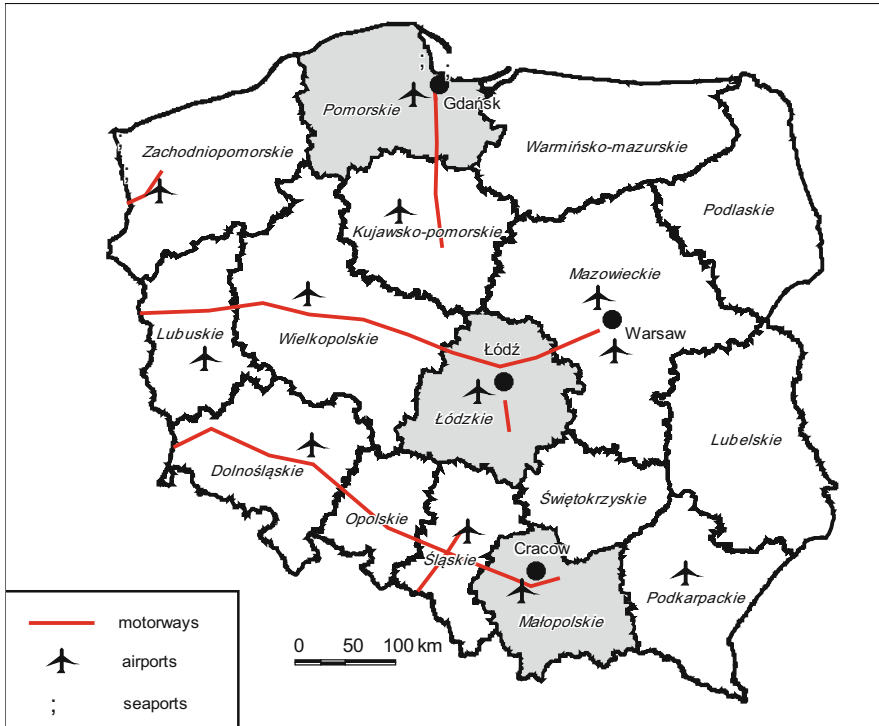
There are several aspects to regional resources, including location and transport and human capital. Each region differs in its availability and accessibility to regional resources to manage its territorial demographic transitions.

### 3.2.1 Location and Transport Connections

The advantages and disadvantages of location between the three study regions are quite different. Transport accessibility is a necessary condition in order to increase the attractiveness of a region to migrants. The Łódzkie and Małopolskie regions are ideally located, with highways and motorways connecting to the rest of Europe. The worst transport accessibility is the Pomorskie region, having only an under-construction part of the A2 highway which will allow connection between Gdańsk and Łódź and in the future join the system of European highways (Generalna Dyrekcja Dróg Krajowych i Autostrad 2012; Fig. 3.7). The transport accessibility from Gdańsk to the capital of the country, Warsaw, is the worst amongst all three regions, as the distance is about 340 km (about 5 hours by car). Better access to Warsaw is available from Kraków (290 km or about 4 hours by car) and from Łódź, which is the nearest to Warsaw and has the best car connection (140 km or about 2.5 hours by national fast road and about 1 hours by the recently opened highway A2).

The railway from Gdańsk-Warsaw when was modernised, with the travel by train to the centre of Poland even worse than travelling by car, taking approximately 6–7 hours. Already in 2015, it was much better with about 3 hours of train travel. It is much quicker to reach Warsaw from Kraków, although the railway tracks were built a long time ago, but trains only take about 2.5 hours. To travel by train from Łódź to Warsaw can take 1.5–2 hours ([www.pkp.pl](http://www.pkp.pl)).

Much faster than the road infrastructure is the air infrastructure. The important international airports are located in Warsaw, Kraków and Gdańsk. Due to Łódź's location so close to Warsaw (130 km), the airport in Łódź covers only 2% of the total passengers (Urząd Lotnictwa Cywilnego 2011). Besides air transport, in the case of the Pomorskie region, the important and additional means of transport is via the Baltic Sea. Two of the three main Polish ports are located in the region: in Gdańsk and in Gdynia. In Gdańsk, the deepwater container terminal is more often used to ship products and goods, while Gdynia focuses on (and is further developing) passenger transport, from which the ships to Sweden quite often operate.



**Fig. 3.7** Transport infrastructure in Poland (2012). *Note:* This map is for illustrative purposes and is without prejudice to the status of or sovereignty over any territory covered by this map. *Source:* Generalna Dyrekcja Dróg Krajowych i Autostrad (2012), [www.gddkia.gov.pl](http://www.gddkia.gov.pl). Accessed July 2012

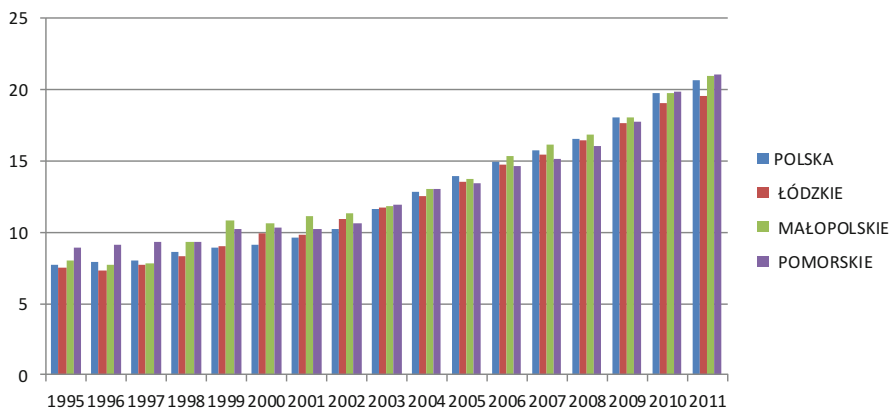
Transport accessibility is essential to improving the residential attractiveness of the regions. It also increases the availability of the regional labour market. As a result, transport accessibility stimulates the inflow of migration, which may compensate for the low fertility rate of the regions. It is important to emphasise the transport accessibility of the study regions—that increases and promotes the current inter-linkages affecting the improvement of their strategies. Łódzkie benefits from road access (highway/motorway) from the capital and connections with Europe. Małopolskie benefits from air and road transport linkages and, to an extent, rail, particularly to Warsaw.

### 3.2.2 Human Capital Potential and Skills for Developing the “White Economy”

The three regions differ in their potential for human capital, which is crucial for the future of the *voivodships* (provinces). There was a significant increase in the share of persons with a tertiary education in the total population aged 15–64 from 1995 to 2011, which could be treated as being an indicator of a significant rise in the level of skills of the workforce. Regionally, the same trend has been experienced. In 2000, Małopolska led the way, with more than 10% of persons aged 15–64 having a tertiary education. In 2011, the two regions (Małopolska and Pomorskie) were above the average for tertiary education. In the whole country, the share of highly educated persons increased to more than 20% (Fig. 3.8). The trend is not so clear—the share is increasing very rapidly among the young cohorts (according to the 2011 Census data, 45% of people aged 25–29 have a tertiary education), but at the same time there is an emerging question about the quality of the education, expressed in terms of adjustment to current and future employers’ expectations. Tertiary education is not necessarily fitted to job position offers, and a very important task is to close the gap between “tertiary production” and the labour market.

The number of higher education units within the study regions has also increased, although at different rates:

- Małopolska: in 2000 there were 23 institutions, by 2010 the number had increased to 33
- Łódzkie: in 2000 there were 19 institutions, by 2010 the number had increased to 32 (and in 2011 there were 30)



**Fig. 3.8** Share of people aged 15–64 with a tertiary education in the Polish study regions (1995–2011). *Source:* Central Statistical Office of Poland. Available at: <http://stat.gov.pl/en/>. Accessed June 2012

- Pomorskie: in 2000 there were 17 institutions, by 2010 the number had increased to 28.

The changing age structure of Poland reflects a decrease in the numbers of youth and as a result there are less students to undertake study. Małopolska managed to increase the number of students per 10,000 inhabitants up to 2010 and is still in a better situation compared to the other two regions and to Poland in general. The Jagiellonian University (JU) is at the top of the list of the best universities in the country. JU, but also other universities in the city, like AGH University of Science and Technology, also have international recognition. This makes Kraków a strong academic centre. The Pomorskie region is the strongest educational centre in Northern Poland. In 2010, there were over 107,000 students in the region. Most of them studied at the TriCity agglomeration, whose potential is created predominantly by the state universities. Despite the demographic change, the number of students by 2010 continued to grow. Over a 12% increase was observed in 2005–2010 years (Local Data Bank, CSO<sup>2</sup>).

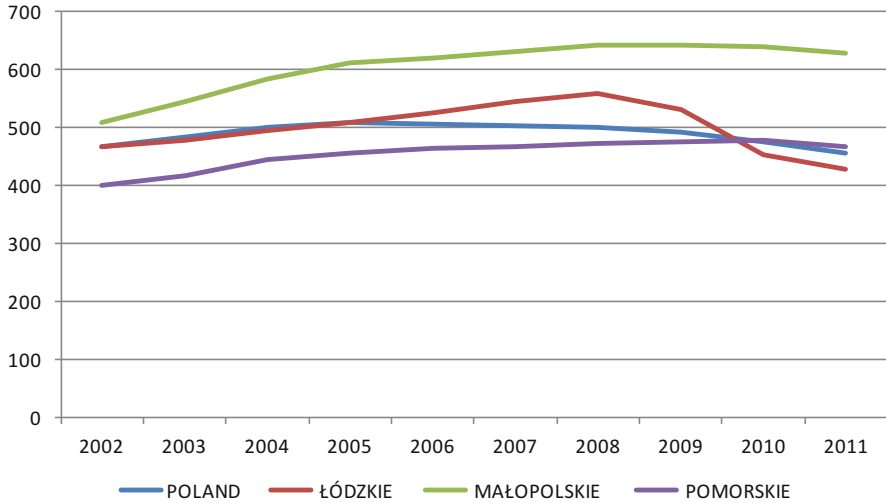
The Łódź trajectory is different; from 2002 to 2008 the number of students increased, but since 2008 there has been a dramatic decrease in numbers, dropping below the national average in 2010 (Fig. 3.9). Łódzkie competes for new students not only with Warsaw, but with Wrocław and Poznań. The catchment area (i.e. the region from which students come) is declining, young people from the eastern part of the Łódzkie region prefer to study in Warsaw; those from the southern part in Wrocław; and those from the western part in Poznań. The other cities offer—according to the students' opinion<sup>3</sup>—better opportunities to start a professional career (due to lower unemployment rates and higher incomes) and to be able to reconcile studying and working. The decrease in student numbers poses important challenges ahead for skills development in the region, at a time when highly skilled human resources are needed to increase the competitiveness of the local firms. The decrease in student numbers shows the adjustment in relation to employment and attractiveness of the SMEs sector. There is a need to develop Łódź as a centre for student education, by creating favourable conditions both aesthetically and economically.

The number of public higher vocational schools has also been increasing (there were changes in classification of higher vocational schools/other higher schools). In Poland in 2007, there were 234 such schools, and in 2011 there were 254, while in the regions:

- Łódzkie: in 2007 there were 12, by 2011 the number had increased to 14
- Małopolska: in 2007 there were 15 and it had not changed in 2011
- Pomorskie: in 2007 there were 16, by 2011 the number had increased to 17.

<sup>2</sup>[www.stat.gov.pl/gus/index\\_ENG\\_HTML.htm](http://www.stat.gov.pl/gus/index_ENG_HTML.htm)

<sup>3</sup>Łódź w oczach studentów łódzkich publicznych uczelni wyższych. IV edycja (2009-2010 (Łódź in eyes of the people studying in Łódź), [http://spatium.uni.lodz.pl/?page\\_id=303](http://spatium.uni.lodz.pl/?page_id=303))



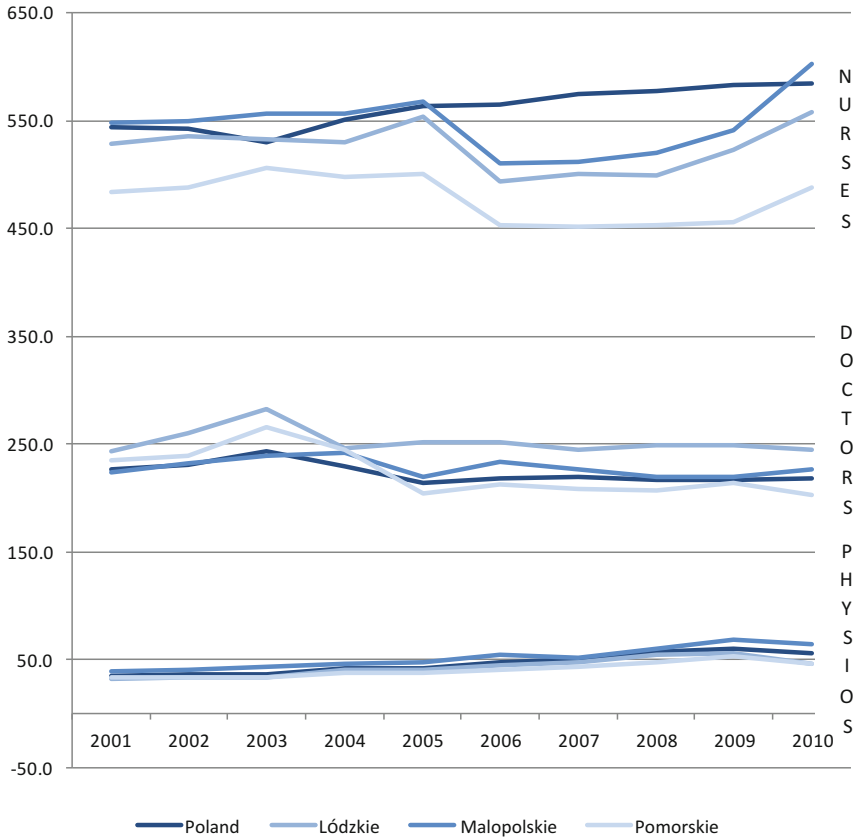
**Fig. 3.9** Number of students per 10,000 inhabitants in Poland and the study regions (2002–2011). *Source:* Central Statistical Office of Poland. Available at: <http://stat.gov.pl/en/>. Accessed June 2012

The level of development of education services in the regions directly affects the quality of human capital. This, in turn, determines the quality of the labour market and has an impact on the dynamics of a region’s economic development and a further impact on its living standards. The high share of people with a higher education in a region has an even more positive aspect because of the ageing processes. People with higher education tend to stay professionally active for longer. They are mentally well prepared for long-lasting activity in the labour market. The importance of education services within the regions cannot be underestimated. The continued development and improvement in these services is required to ensure quality market supply of labour, and the longevity of a professionally active population.

### 3.2.2.1 Skills for the “White” Economy

“White economy” refers to those products, services and activities related to healthcare and care including the dependent, disabled and the elderly. Regional comparisons of the “white” sector with reference to the situation in Poland are much more challenging, as there are no direct or composite indicators giving precise information about this sector’s importance in the economy. Some indicators describe the differences. The number of physicians per 100,000 inhabitants in Łódzkie is much better than in other regions and in Poland generally. In Pomorskie, statistics reveal the decline of physicians per 100,000 inhabitants in the last years (Fig. 3.10). The significant drop in their number is observed from 2004, after





**Fig. 3.10** Physicians/doctors, physiotherapists and nurses per 100,000 inhabitants in the Polish study regions. *Note:* Physios = physiotherapists. *Source:* EuroStat. Available at: [http://epp.eurostat.ec.europa.eu/portal/page/portal/statistics/search\\_database](http://epp.eurostat.ec.europa.eu/portal/page/portal/statistics/search_database). Accessed June 2012

joining the EU. It may be explained by the external emigration of white sector professionals; however, this would need further research.

The very positive trend of constant growth in the number of physiotherapists per 100,000 inhabitants is observed in all regions as well as in Poland (Fig. 3.10). The level of development of this type of service is especially significant in the Małopolskie region, where the number of physiotherapists is above the national average, which is related to the number of available schools and universities in which it is possible to obtain the corresponding education, and the relatively large number of rehabilitation and spa/health resorts in which they can work in the region.

For nursing professionals, the trend is not clearly as positive as the indicator shows increases as well decreases in the number of nursing professionals per 100,000 inhabitants (Fig. 3.10). In this aspect of white services development,

Małopolska is in the best situation, with numbers above the national average. Concerning the ageing population, the access to nursing staff is of crucial importance. It may be considered to be one of the key indicators for the quality of life for elderly people. The importance of continued resources and support to the white sector is of utmost importance considering the ageing of the population in the three study regions.

### 3.2.2.2 Long-Term Care

In the context of an ageing population, further analysis of the possibilities and barriers to long-term care is part of the “white” sector. There is limited data on long-term care, not only at a regional level, but also at a national level (e.g. no data are available on the number of informal older carers in Poland and the regions). However, demographic changes currently do not have an impact on improving the infrastructure of long-term care sectors. This is due to changes in the law regarding social assistance (2004), but also due to the obligatory standardisation of social assistance houses (*Domy Pomocy Społecznej*), called nursing or residential care facilities, which for some it is not possible to access. Data presented here are from Eurostat sources. However, in some regions, information about the beds available in the region is officially presented on a website, with costs and waiting lists. As an example, in Małopolska, as at 31 July 2012, there were 7315 available beds in nursing and residential care facilities (for all people, including older persons), while 137 beds were free and 679 persons were still on waiting lists. The indicator of available beds in nursing and residential care facilities per 100,000 inhabitants show that Małopolska and Łódzkie are above the average, even though Łódzkie decreased the number of available beds in 2010 compared to 2003, while in Pomorskie this indicator was lower than the national average, but had increased from 2003. Many experts and scientists indicate an urgent need to prepare the long-term care system for the population ageing phenomena, not only in finding new ways of securing financing for elderly care services (Augustyn 2010) through additional care insurance, but also to support family carers (Eurofamcare project),<sup>4</sup> especially working ones (Stypińska and Perek-Białas 2014).

The inconsistency in data of the healthcare sector can be found in various reports. For example, in the official report of Małopolska’s health department of the Voivodship Office responsible for the health sector, there were 13 (in total) geriatricians employed at the end of December 2010 and no nurses with geriatrician qualifications (see Protection of health care in the province of Małopolska in 2010–2011). However, the information differs as shown in Table 3.3, where data is available regarding geriatricians and geriatric beds, and centres of independent

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<sup>4</sup>More information on this EU-funded study carried out in Germany, Greece, Italy, Poland, Sweden and the United Kingdom (contract n. QLK6-2002-02647) is available at: [www.uke.de/extern/eurofamcare/beschreibung.php](http://www.uke.de/extern/eurofamcare/beschreibung.php) (accessed 20 October 2012).

**Table 3.3** Geriatricians, geriatric centres and geriatric beds at the end of 2010

	Małopolska	Łódzkie	Pomorskie	Śląskie
Geriatricians	36	15	15	58
Geriatric centres	7	1	5	25
Geriatric beds	73	10	5	229

*Source:* Dubiel, M. and A. Klich-Rączka (2011), Wyzwania dla opieki zdrowotnej—kadry, leki, badania w Zeszyty Naukowe Ochrony Zdrowia, “Zdrowie Publiczne i Zarządzanie”, tom. IX, nr 1/2011

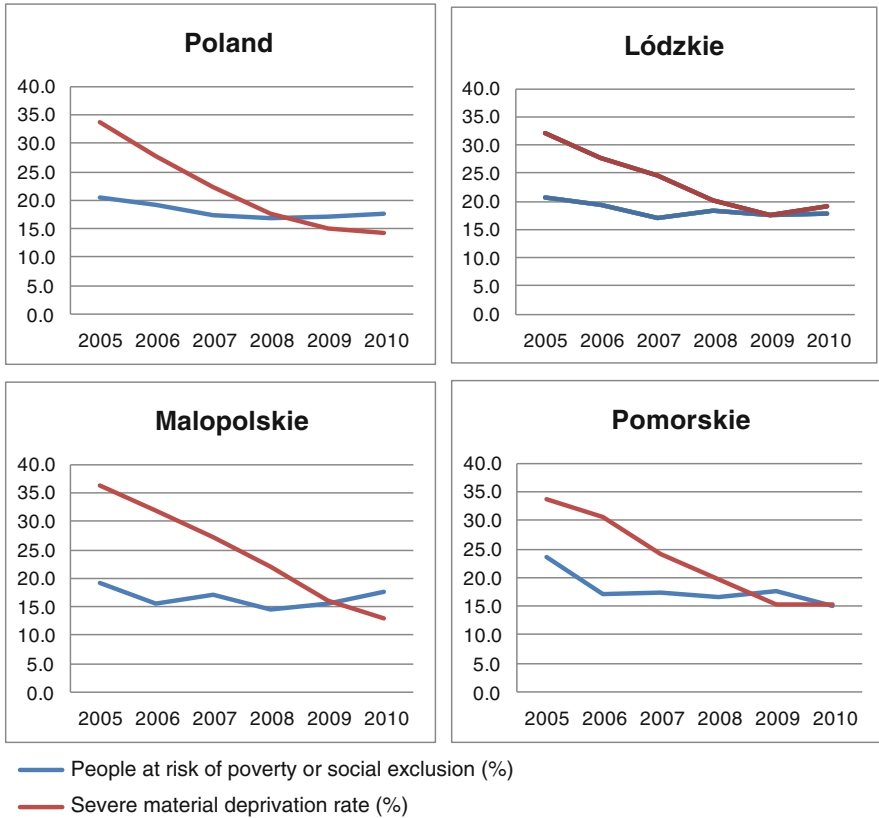
expertise (Dubiel and Klich-Rączka 2011). According to Table 3.3, Małopolska is in a much better situation, both Łódzkie and Pomorskie; however, the leading region in Poland is Śląskie.

The new demographic trends, and particularly the issue of an ageing population, poses different sets of challenges for health services. From the available data, it seems that the Małopolskie region compared to two others is already in the best position to face these new challenges. In particular, the Pomorskie region has to carefully consider the health sector’s needs in its development strategy plans.

### 3.2.2.3 Social Exclusion

Poverty should be taken into account in the study of the overall socio-economic situation in the regions. This situation is definitely the worst for Łódzkie, followed by Małopolska, with a relatively better situation in Pomorskie, where the data is below the national average (Fig. 3.11). In fact, Małopolska has fewer people experiencing severe material deprivation than the other regions. The problem is closely related to: (i) remuneration levels (especially to frequency of minimal wages); (ii) unemployment levels (lack of income); (iii) size of the agricultural industry (typically the incomes of people working in agriculture are much lower than the average income). These three factors affect poverty levels directly and indirectly (via a formula for pension calculations).

The analysis of persons who are supported by social assistance per 10,000 inhabitants shows that there is a decrease in numbers in Poland and the study regions (Table 3.4), but this is mostly due to changes in the regulation of social assistance, which limits access to social assistance. In 2004 there was a similar decrease as there was also a change in the social assistance laws. However, in Poland, as well as in the regions, similar trends could be observed in each year analysed. The change in this indicator between 2002 and 2011 for Poland shows about a 21% decrease; in Łódzkie, the change in the value of this indicator is only 12% in the same period; and it is similar for Małopolska and Pomorskie, which were above the average at approximately 28% and 27% respectively. Małopolska previously experienced (in 2002) and in 2011 the lowest number of beneficiaries of social assistance per 10,000 inhabitants.



**Fig. 3.11** People at risk of poverty or social exclusion compared with the severe material deprivation rate. *Source:* based on EuroStat. Available at: [http://epp.eurostat.ec.europa.eu/portal/page/portal/statistics/search\\_database](http://epp.eurostat.ec.europa.eu/portal/page/portal/statistics/search_database). Accessed June 2012

### 3.2.2.4 Civil Society

In the context of population ageing, civil society and its role have to be particularly taken into account, as civil society can fill the gap if public institutions are lacking. The data regarding the development of non-government organisations (NGOs) focused on tasks related to population ageing (children, older and inter-generational co-operatives) are not easily accessible and not necessarily accurate (as shown by the studies of Klon/Jawor or estimates prepared for the EY 2011 of Volunteerism). Based on data from the Central Statistical Office, there is an increased number of NGOs in Poland, and in all of the study regions (Table 3.5). It should be stressed that in these organisations, in addition to volunteers, there are options to be employed, as shown in Table 3.5.

Regarding the development of civil society and the activity of NGOs in the regions, there are limited accessible quantitative studies that explain the

**Table 3.4** Persons of social assistance per 10,000 inhabitants

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Poland	666.8	691.3	631.2	674.7	738.4	620.8	551.3	545.9	541.5	523.7
Łódzkie	605.4	656.2	585.7	654.3	734.8	632.6	545.4	539.5	544.8	530.4
Małopolskie	580.4	604	483.3	511.4	562.2	480.8	436.9	436.7	437.4	418.7
Pomorskie	763.9	796.5	696.6	728.4	733.3	675.6	585.3	580.7	569.6	561

Source: Central Statistical Office of Poland. Available at: <http://stat.gov.pl/en/>. Accessed June 2012

**Table 3.5** Number of active non-governmental organisations and persons employed in them

(in thousands)	2008		2010	
	Number of NGOs	Number of employed persons	Number of NGOs	Number of employed persons
Poland	70.9	70.8	75	85.4
Łódzkie	4.6	3.0	4.8	3.3
Małopolskie	6.6	7.2	6.8	8.1
Pomorskie	3.6	3.8	4.2	5.3

Source: Central Statistical Office of Poland. Available at: <http://stat.gov.pl/en/>. Accessed June 2012

determinants and factors relating to the higher or lower activity of citizens in NGOs for these regions, which could be compared as being better or worse. Recent studies do highlight initiatives for seniors in the three regions (Perek-Białas 2013; Sagan 2013; Szukalski 2013). However, in Kraków there were no additional advisory groups at the city level that have a direct influence on what could be done for the older population (such as in Gdańsk where there is the Council for Seniors, with an active University of Third Age, and in Gdynia where there is the Centre for Senior Activity, which also tried to engage older persons in various activities). However, since 2014 progress has been made, such as the establishment of Cracow's Council of Seniors, an advisory group for city policy makers, and new institutions—financed by local funds—Centres of Seniors' Activity aimed at activating older inhabitants of city in various ways.

In Łódź, the Senior's Council was established in October 2011, and had its first session in July 2012. In recent years, due to public support from the European Social Fund (ESF), a substantial increase in the number of NGOs focused on pre-primary education was observed. Unfortunately, there are still only 72.2% of children aged 3–6 with access to pre-primary establishments (83.5% of children living in urban areas have access compared to 55.1% in rural areas), and an even smaller proportion were able to attend kindergartens (respectively: 53.8%, 73.2% and 24.6%). Particularly in rural areas, grandparents, predominantly grandmothers, substitute for those services that are lacking for families with young children. This is still the dominant form of inter-generational support, although some new

initiatives are emerging. However, discussion around the inter-generational solidarity at the regional level is focused primarily on initiatives aimed at education of the elderly (such as the Universities of the Third Age, or UTAs) and at leisure activities for older people.

In Małopolska, the NGOs are well-known and active not only at the regional level, but at the national level as well, as they fall within the structure of umbrella organisations of Forum 50+ and the AGE Platform Europe. Projects of Małopolska's NGOs are treated as being good practices and are well known in Poland and abroad (as the Academy of Fullness of Life). The role of the S@S in engaging seniors via educational and cultural offers is internationally known and appreciated (Brussels Conference, 4 June 2012). The social sphere is the region's resource, and constitutes its endogenous capital, whose capabilities should be considered in the development scenarios. The described nature of the region's social capital helps to develop the attitudes and activities aimed at social inclusion and integration. The strong bonding of social relations and human capital resources create the conduit for the high social milieu of the NGOs' activities. Regional policy should stimulate the development of NGOs focused on tasks related to population ageing. Their role in providing services devoted to the existential needs of older people may be crucial. The mobilisation of the NGO sector to combat social exclusion processes should be strengthened by the development and availability of information technology services. Considering the high level of households' computer equipment and broadband Internet connection access, the development of e-administration and of e-governance generally may significantly help to avoid social exclusion stemming from low mobility caused by the age of the region's inhabitants. In this sphere, the role of regional and local policy is pivotal. Therefore, promoting the importance of the role of NGOs in society, maintaining and, in some cases (as the population ages), increasing the support and importance of sharing knowledge between NGOs and other institutions dealing with seniors at the local level can boost community inclusion.

One of the most successful initiatives developed throughout the entire country are the UTAs. The number of these universities is expanding very rapidly: in 1989 there were only 9; by 2007 there were 125; in 2010 there were 248; and in March 2012 as many as 385 (in 2012, there were 32 in Małopolska, 28 in Łódzkie and 20 in Pomorskie). These numbers are evolving: in August 2012 there were 410 UTAs.

In addition to increasing the number of UTAs, the increase of the number of students as well as the education range of individual universities is observed. The dynamic of growth of Gdańsk University of the Third Age provides a good example of the intensity of the changes (Table 3.6).

Besides of the many known Universities of Third Age (UTAs) located in Cracow (like Jagiellonian University's) there are also other successful UTAs in Małopolska like in Nowy Sącz, which besides general education offers for seniors upon retirement, has introduced courses which can give participants new skills and an option to obtain certificates in new professions (as older persons' assistants) (see Box 3.1).

**Table 3.6** Gdańsk University of the Third Age

Academic year	Lectures			Number of lectures	Classes—number of teaching hours	Number of students				
	Professors	Doctors	M.Sc			Gdańsk	Kartuzy	Prużycz Gd.	Pelplin	Total
2004/05	7	8	6	29	464	470	—	—	—	470
2005/06	11	10	10	27	945	735	—	—	—	735
2006/07	13	12	19	51	2378	770	—	—	—	770
2007/08	9	16	17	50	2525	800	50	200	—	1050
2008/09	17	10	26	52	2878	1250	70	220	180	1720
2009/10	15	13	33	75	3033	1300	70	220	180	1770

Source: Based on Gdańsk University. Available at: [www.ug.edu.pl](http://www.ug.edu.pl). Accessed June 2012

**Box 3.1 An Example of Initiatives for Older Citizens in Nowy Sącz City: The Third Age University**

Participants of Nowy Sącz's University of the Third Age are obtaining job certificates in new professions like medical assistants, IT technicians, beauticians, tour guides and human resource experts.

Participants of Nowy Sącz's UTA made up half of the whole group for the courses to prepare for taking the exam to become a medical assistant. The course was divided into two terms, twice per week for 4 h. At the beginning there were 42 participants aged between 20 and 60. Thirty-one of them graduated. Besides theoretical lessons, there was also a lot of practical training. Skills could be verified via special training/apprenticeships in rehabilitation hospitals, social welfare houses (including those for the elderly). As a result, three graduates of the UTA became volunteers in the newly opened Nowy Sącz's hospice and others could be informal caregivers for their ill, disabled family members. This is an innovative project, meaning that the participants of the UTA could obtain new skills and re-enter the labour market for free.

*Source:* information provided by the President of the Sądecki University of Third Age Wiesława Borczyk and [www.dziennikpolski24.pl/pl/magazyny/kariera/1219196-nowe-kwalifikacje-na-emeryturze.html](http://www.dziennikpolski24.pl/pl/magazyny/kariera/1219196-nowe-kwalifikacje-na-emeryturze.html), 0:pag:2#nav0 accessed August 2012.

The Universities of the Third Age have had political support in parliament as there is a special parliamentary working group for the UTA and the Parliamentary Commission of Senior Policy. UTAs are important partners in creating and designing social policy for seniors (being actively involved in initiatives of a new Department of Senior's Policy in the Ministry of Labour and Social Policy established in 2012).

It seems that there is a need for continued support for UTAs and other seniors' organisations to create a knowledge network for sharing initiatives between UTAs and to help find volunteers from among its members. One example is the Programme of the Social Activity of Older People (ASOS) of the Ministry of Labour and Social Policy. Since late 2012, with great success, more than 400 organisations, UTAs and other institutions focused on seniors were able to finance their activities thanks to this programme. Many activities financed from these funds are directed at increasing the activity of seniors at the local level (via volunteering, see, the Organisation of Creative Initiatives "e" from Warsaw<sup>5</sup> which managed to organise special intensive workshops for leaders from UTAs from various parts of Poland, to share best practices between UTAs and their leaders and to develop skills for volunteering for their local community).

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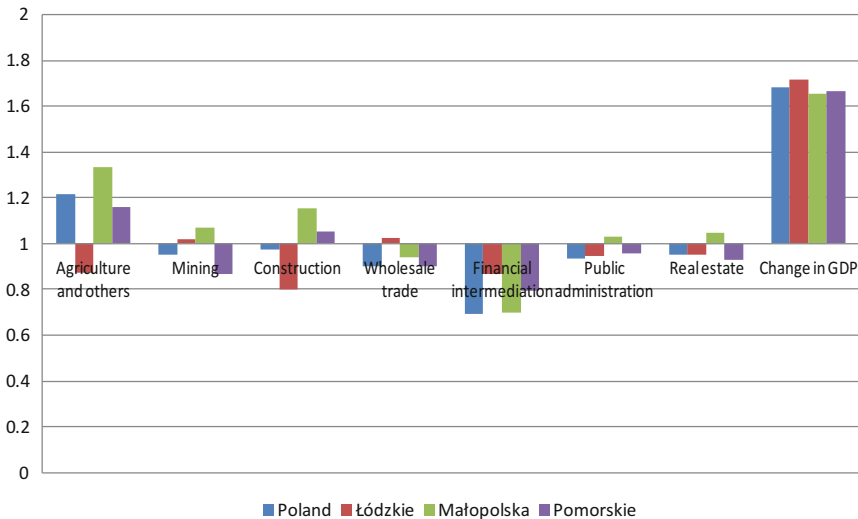
<sup>5</sup><http://e.org.pl>



### 3.3 Demographic Change, Older Workers and Regional Policy Challenges

The regions under study have different economic situations, not only in terms of current inflows, but also in terms of accumulated resources. GDP per capita is a synthetic indicator commonly used for the comparative analysis of the level of economic development of regions. Between 2002 and 2009, the economic growth rate was almost the same in all of the study regions (in Pomorskie it increased by 57.6%, in Łódzkie by 58% and in Małopolskie by 59.6%), but the absolute differences were stable (Łódzkie 91–92% of the national average, Małopolskie 85–86%, Pomorskie 95–98%). The differences result from structures by age, economic activity and economic sector (Fig. 3.12). The lower value of GDP per capita for Małopolska compared to the other regions could probably be explained by the fact that it is an agricultural region.

However, in 2010, all regions were below average for Poland (GDP per capita), which is heavily weighted by Mazowsze (especially in comparison to Warsaw, where the GDP per capita is equal to 301.1% of the national average, with a population share of 4.4% of the country). In 2010, the GDP in Pomorskie and Łódzkie was relatively close to the average (Pomorskie: 96.0%, Łódzkie: 92.1%) with Małopolskie (84.9%) being in a much worse situation. At the same time, there were sub-regional differences. The region’s capital area is in a much better situation compared to the rest of the region (for example, in Łódzkie, GDP in Łódź is 123.6% of the national average, which is almost twofold of the GDP in the Sieradz



**Fig. 3.12** Changes in national and regional sector employment and GDP (2000–2007). *Note:* GDP per capita, national currency, current prices. *Source:* based on OECD.StatsExtract. Available at: <http://stats.oecd.org/Index.aspx>. Accessed June 2012

**Table 3.7** Employment rates of the population aged 20–64 in Poland, the study regions and the EU27 (1991–2011)

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Poland	62.6	61.0	59.2	57.1	56.9	57.1	58.0	60.1	62.7	65.0	64.9	64.6	64.8
Łódzkie	64.7	62.1	59.4	57.9	57.7	58.1	58.8	61.2	64.3	66.6	65.6	66.2	67.0
Małopolskie	64.9	65.1	64.2	60.7	59.5	60.4	60.6	61.7	64.1	67.3	66.6	65.3	65.7
Pomorskie	61.1	59.5	59.3	56.3	55.6	54.8	55.9	58.9	62.1	65.0	63.9	64.4	64.1
UE-27	...	66.5	66.9	66.8	67.2	67.3	68.0	69.0	69.9	70.3	69.0	68.6	68.6

*Notes:* Light grey highlight indicates better than average for Poland and darker grey highlight is below the Polish average. White is equal to the national average

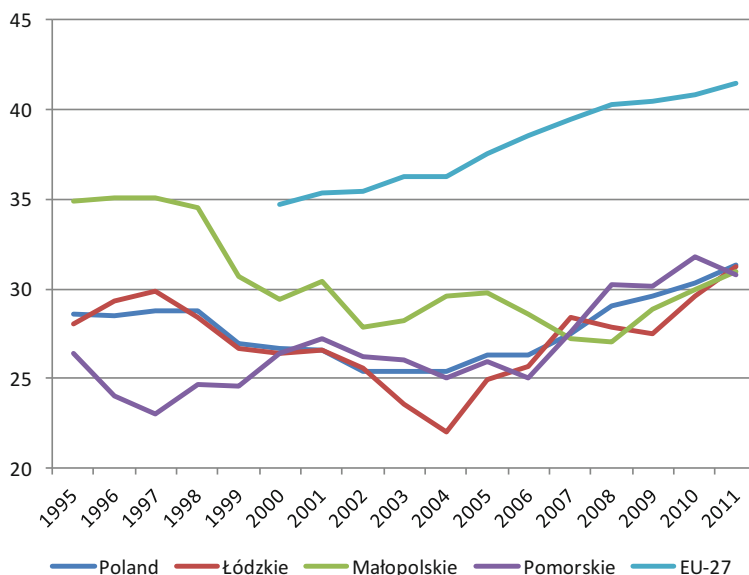
*Source:* Central Statistical Office of Poland. Available at: <http://stat.gov.pl/en/>. Accessed June 2012; Eurostat. Available at: [http://epp.eurostat.ec.europa.eu/portal/page/portal/statistics/search\\_database](http://epp.eurostat.ec.europa.eu/portal/page/portal/statistics/search_database). Accessed June 2012

sub-region, which is 64.7%; in Małopolskie, Kraków is 150.9% and the Nowy Sącz sub-region is 57.9%; while in Pomorskie's Tricity sub-region it is 140.6% and in the Gdansk sub-region it is 69.8%) (Local Data Bank, CSO). The sub-regional differentiation is more important than the inter-regional differences.

Demography is a key factor affecting the development of an economy. In the last decade, changes in economic activity in the study regions were closely related to the national situation on the labour market. The directions and pace of changes were generally similar to the national trends. At the same time, differences between regions were observed in employment figures, reflecting demographic components (age structure of the population) and economic dynamics (Table 3.7).

The Łódzkie region is experiencing a higher employment rate than the national average in the 20–64 year-old age group (the difference is especially visible in the female population, see Szukalski 2013), in spite of having the highest proportion of workers in the so-called immobile working age and lower than average activity and employability among those aged 50 and over. Relatively high economic activity and subsequent employment levels for young females is probably one of the reasons for the low fertility in Łódzkie. The Małopolskie region profited from a relatively high proportion of people who were self-employed (especially in agriculture), particularly for people 50 and over. The structural changes restricting the importance of agriculture as an economic sector are responsible for the long-term decline in employment rates among people aged 50 and over in the region (Fig. 3.13).

The labour market in post-socialist Poland was affected by a high level of unemployment. All study regions experienced this phenomenon, but the extent was dependent on many factors—generally the best situation was observed in Małopolskie where due to a significant proportion of agriculture and self-employment (artisanship, small commerce), the influence of broader economic crises between 1998 and 2002 were modest. The initial worst labour market position of Łódzkie, which resulted from the collapse of the textile and chemical industries developed in the socialist era, shifted due to SME closures (especially



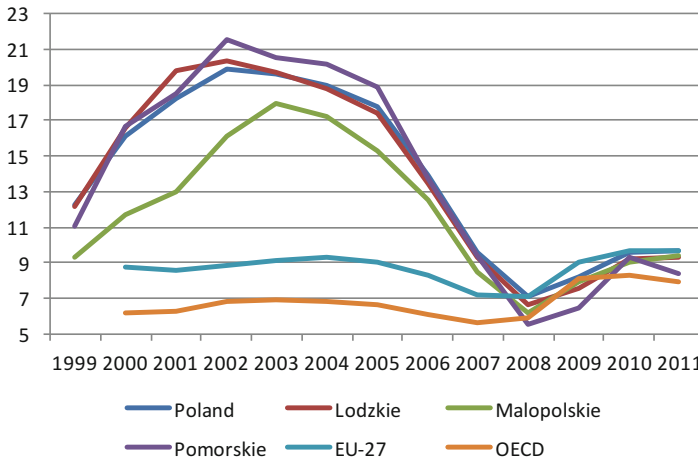
**Fig. 3.13** Employment rate of people aged 50 and over in Poland, the study regions and the EU27 (1995–2011). *Source:* Central Statistical Office of Poland. Available at: <http://stat.gov.pl/en/>. Accessed June 2012; Eurostat. Available at: [http://epp.eurostat.ec.europa.eu/portal/page/portal/statistics/search\\_database](http://epp.eurostat.ec.europa.eu/portal/page/portal/statistics/search_database). Accessed June 2012

small enterprises). The inter-regional differences narrowed due to a general economic increase after EU accession (Fig. 3.14).

It is worth underlining that the unemployment rate in the Łódzkie region is close to the national average, despite the relatively high rate of this indicator in Łódź. The city is an exception to other Polish “big cities”, where unemployment is typically lower by one-third to one-half compared to the rest of the surrounding region. For example, in April 2012, the unemployment rate in Łódź (11.6%) was more than twice that observed in Warsaw (4.0%), Kraków (5.5%), Wrocław (5.4%) or Gdańsk (6.2%), and was much closer to the regional average (13.5%) than in other regions (Małopolskie: 11.0%; Pomorskie: 12.8%; Mazowieckie: 10.4%; Dolnośląskie: 13.1%).<sup>6</sup> Also, in Łódzkie, the share of the population 55 and older among the long-term unemployed is higher than the national average (2010: Poland 15.1%, Łódzkie 19.2%, Małopolskie 11.4%, Pomorskie 15%).<sup>7</sup> In the case of Łódź, the higher unemployment level is related to the lower level of education of the population and to the long-term consequences of initial unemployment (people who lost

<sup>6</sup>Bezrobotni oraz stopa bezrobocia wg województw, podregionów i powiatów—kwiecień 2012 r., Statistics Poland, Warsaw 2012.

<sup>7</sup>Based on data from Statistics Poland, Bank Danych Lokalnych, [www.stat.gov.pl/bdl/app/strona.html?p\\_name=indeks](http://www.stat.gov.pl/bdl/app/strona.html?p_name=indeks)



**Fig. 3.14** Unemployment rate in Poland, the study region, EU27 and the OECD (1999–2011). *Source:* Central Statistical Office of Poland, Available at: <http://stat.gov.pl/en/>. Accessed June 2012; Eurostat. Available at: [http://epp.eurostat.ec.europa.eu/portal/page/portal/statistics/search\\_database](http://epp.eurostat.ec.europa.eu/portal/page/portal/statistics/search_database). Accessed June 2012

their positions in early 1990 and were unemployed for a few years are treated as less valuable work candidates). This implies the need to develop an education system fitted to employers' expectations and fit for the future demand for labour.

Graphs (Figs. 3.13 and 3.14) illustrating the changes in the level of employment and unemployment rates show a clear convergence of values for the regions over the years. The values for the regions are also much closer to the national average. This may be the result of cohesive policy subsequently carried out in the country with support from the EU structural funds. Although the differences among regions are still present, the scale is much smaller, which is well reflected in Figs. 3.13 and 3.14.

Due to general regulations related to the eligible retirement age in Poland of 60 years-old for women and 65 years-old for men, the majority of Poles aged 65 and older do not work and are pensioners. However, as the Polish average employment rate for people over 65 is close to the European one, the obvious exception is Małopolskie, which is above average (Table 3.8). On the other hand, in Łódzkie and Pomorskie, the employment rate for people 65 and over is lower than the average for Poland. Differences across regions could be explained by different attitudes to work and job places being available for silver workers or by the development of the agricultural sector. However, more detailed data is lacking, which could clarify this situation.

The interpretation of differences in employment rates for people aged 65 and over requires in-depth research, taking into account the qualitative aspects of both human capital and the structure of the economy in particular regions. Such features as high education rates and self-employment prolong the period of professional activity. The positive regional statistics of employment rates for those 65 and older

**Table 3.8** Employment rates of the population aged 65 and over in Poland, the study regions, EU27 and the OECD (2002–2011)

(%)	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Poland	6.4	5.9	5.8	5.6	8.5	4.8	4.7	4.7	4.7	4.8
Łódzkie	5.5	4.3	4.0	4.8	6.2	3.5	3.6	3.0	3.4	3.9
Małopolskie	10.5	9.8	9.9	10.0	14.3	6.0	5.0	5.3	6.9	7.0
Pomorskie	3.5	3.5	2.7	2.5	4.4	2.5	2.9	3.4	2.8	3.2
OECD	10.7	10.8	10.8	11.1	11.3	11.6	11.9	11.9	12.4	12.3
EU27	4.6	4.3	4.1	4.3	4.4	4.6	4.7	4.7	4.7	4.8

Source: Eurostat. Available at: [http://epp.eurostat.ec.europa.eu/portal/page/portal/statistics/search\\_database](http://epp.eurostat.ec.europa.eu/portal/page/portal/statistics/search_database). Accessed June 2012

for Małopolska seem to confirm this relationship. However, there is a need for resources and support for education and entrepreneurship, which can further prolong the period of professional activity, which needs to be taken into consideration, especially in Łódzkie and Pomorskie. The higher the level of education of professionals, the stronger the tendency to stay longer in the labour market and to be more flexible with retraining. Also, the activity in the entrepreneurial sector is positively correlated with an extended employment period. This is most evident in the examples of self-employment and family business where reaching retirement age rarely means actual retirement.

The development of education services oriented towards population ageing should take place in two areas:

1. *Developing and improving the education system in strengthening generic skills.* These skills are best developed in secondary schools and at higher education institutions. This type of education shapes the attitudes towards lifelong learning which are necessary for flexible and longer engagement in the labour market. Schools which provide a broad education are the best places to promote and form an active and healthy style of life. The Universities of the Third Age are the later phase of this type of education. Due to the general education profile, secondary schools and universities have very limited access to funds from business and production sectors, including private funds. Thus, any support from various sources (including European Funds) to strengthen and develop this type of education within regions seems to be a desirable investment for the future. Programme support for lifelong learning and promoting an active lifestyle, including active ageing, in the education system helps to save costs for future older worker training and healthcare.
2. *Training and skills development should be directly oriented to the needs of the labour market.* They are also of a two-fold nature: (i) skills and competence training for employees (especially aimed at ICT competencies to eliminate possible “e”-exclusion, as well as in other specific skills needed by the enterprises); and (ii) age management training for employers. The innovative project “I work, I develop competency: An innovative model of support for workers

50+” financed from the ESF and carried out in the Pomorskie region, provides an example of this kind of initiative (Box 3.2).

**Box 3.2 I Work, I Develop Competency: An Innovative Model of Support for Workers over 50 (Poland)**

Pracownia Badań Społecznych DGA implemented in 2010–2012 in the Pomorskie Region is one of the first innovative project testing. The project was aimed at the certain target groups:

**User group:** i.e. representatives of local and regional institutions in charge of leading employment promotion policy, holding the instruments for the implementation of system solutions to economic activity in the labour market, and public counsellors (employment offices) and private labour market institutions.

**Groups of customers:** those working in the age group 50 and over, residing in the Pomorskie region, interested in remaining in employment and continuing professional development. Moreover, in this group are human resource professionals and human resource departments dealing with human resource management, including age management personnel in companies.

**The main objective** of the project was to increase the activity and the attractiveness of employment of workers 50 and older in the labour market by developing and testing an innovative model of providing consulting services and development (including career counselling and assessing levels of competence, participation in training and courses, the use of specialised prevention of health-related consulting and legal services relating to the functioning of the labour market).

**The dimension of innovation** in the labour market affected three areas:

a new approach to the problem of availability and dissemination of career counselling services for people who work (creation of the Career Centre 50+) implementation of new methods of vocational guidance, balance of competence (including the development of tools to diagnose the potential competences of workers 50+) implementation of the new forms of support: financial instrument activation services in the form of Talon Career.

**Balance of competency** included activities such as:

- training/training of ABC Enterprise
- personal development training
- legal consultations on issues of employment and labour law
- consultations on the functioning of the labour market
- pro-health consultation (geriatricians, physiotherapists, dieticians, psychologists).

(continued)

**Box 3.2** (continued)

*Source: Pracownia Badań Społecznych DGA 2012, Project Implementation Strategy; I work—I develop competence. An innovative model of support for workers 50+. Pracownia Badań Społecznych DGA, Gdańsk*

Population ageing increases the demand for services within the silver economy in each of the investigated regions. The region will react to the need for investments in silver economy services as soon as the positive economic results appear. The silver economy should be understood in a broad sense as covering all activities addressing:

- existential needs of older people
- needs of older employees
- needs of older customers
- needs of employers focusing on silver consumers' needs.

The general character of population ageing processes means that most of the interventions can be similar or the same across the regions. However, in each region, development strategies should identify the endogenous resources for particular types of silver economy activity development. It especially refers to activities targeted at older customers in such areas as tourism, recreation, spa and bath services. The possibilities for their development are connected with natural environmental resources and green economy development within the particular region. The development of the silver economy should be treated as an opportunity for regional economic recovery.

The development of sectors of the silver economy devoted to the existential needs of older people and needs of older workers should be supported with public funds, including the European Funds. However, the activities in these areas are especially appropriate for broader involvement by volunteers, NGOs and all other types of civil society organisations. Some financial support from the European and other funds may trigger real social movement in this sphere. The development of the silver economy, aimed at older customers and older entrepreneurs, opens up a variety of opportunities for SMEs' sector activities. SMEs are able to provide services and products tailored to the specific demands of particular age groups of clients and to be flexible enough to follow the ever-changing needs. The European funds may be used to provide the know-how and/or start-up funds supporting entrepreneurs and the self-employed ready to settle their businesses within the silver economy.

### 3.4 Local Visions for Demographic Transitions

Workshops co-organised by the OECD, the Polish Ministry of Regional Development, the regional Marshall's Offices of Pomorskie, Małopolska and Łódzkie, and involving local stakeholders, discussed demographic changes in their regions under the following themes: older workers; silver, white and green economies; urban and local sustainable development; and family policy. The key messages are discussed below.

#### 3.4.1 *Older Workers*

Stakeholders from the three regions share the same concerns regarding older workers, in particular:

- negative perceptions of older workers compared to younger ones (negative attitudes/stereotypes)—ageism
- current poor economic and labour market situation, which works against older workers
- lack of systematic solutions that could promote longer labour market activity of older workers (increasing the in retirement age is not enough).

Government solutions are not enough, and at present may even be acting against older workers (such as the 4 years of income protection before retirement age). There is a considerable lack of a proper and adequate culture in relation to age management at company levels. The attitude and behaviour of older workers differ depending on their education level, type of work and profession, and thus an increase in motivation or a change in attitude is needed. Table 3.9 outlines the workshop conclusions regarding older workers in the labour market.

Overall major implications from the focus groups about situation of older worker include:

- *The need for programmes/initiatives that promote older persons in the workforce* (removing the negative stereotyping, enhancing employers' awareness of costs related to age discrimination and of future potential changes in labour markets), and skills development and training need to be adjusted to meet older people's needs, by undertaking frequent, regular evaluations of their skills and ways to potentially use these in their current or new jobs. In cases where some skills may be lacking, there should be an easy and co-financed way of updating these skills via training. It is not possible to have a unique solution to cover the training needs for each person, so it is the role of job advisors to help not only employers, but also to act as independent advisors for employees.
- *Policies and strategies need to be proactive—not only in the short term—but also in the long term, and to recognise the need for flexibility.* Labour market regulations should be as stable as possible, or, if they must be changed, there



**Table 3.9** Key messages from the regional workshops: Older workers in the labour market

MAŁOPOLSKA	ŁÓDZKIE	POMORSKIE
<p>A lot of negative stereotypes make active ageing difficult to achieve, including: older people are not ready for change and they are more often sick than younger workers. On the other hand, some people said that ageing workers are reliable, stable and respectful members of staff. It became clear that actively helping older people find jobs can have a high success rate. In addition, ageing workers in employment can play a crucial role in supporting different generations. This is not a one-way system, younger workers can also support older workers.</p> <p>It is important to recognise the potential of older people and not focus solely on the shortcomings. In addition, training and skill development needs to be adjusted to what older people need and want. This also holds for specific programmes. An example was given of an entrepreneurship subsidy programme that was not successful among older unemployed, but it was noted that they were not supported either.</p> <p>Some participants wondered if the current stance on older people in society is sustainable in the longer term. There will be better times after the financial crisis and with an increasingly ageing population, skills shortages on the labour market might frustrate the region's further development.</p>	<p>It is a complex situation made up of shrinking numbers, ageing and unemployment due to redundancies. There is a tendency to think short term.</p> <p>Policy making needs to take into consideration the medium and longer terms, not only at the national level but also at a regional level. The problem might not be evident now, however, in the future there could be substantial problems. It is very important to be proactive. Policy making needs to look ahead. Particularly in a region that currently has economic problems, there is a need to make sure the conditions for progress and growth are in place. If there are shortages of workers in the future, it could make growth very difficult.</p> <p>A very important topic in the discussion was the need for flexibility. Working longer does not mean working in the same job. Career opportunities are very important as well as inter-generational solidarity.</p>	<p>Ageing is not a standalone issue. Ageing, economic and other trends jointly demand new ways of thinking about work, the labour market and continuous development of human capital and policies. Working longer does not always mean working in the same job. Radical job changes can be difficult, but there is a need to think in creative ways to discover promising career opportunities. There is also a need to ensure that actions are not undermined by negative stereotypes – people encountering many difficulties lose self-confidence after a while. The issue of ageing and difficulties in infrastructure are very much connected. It is very hard to expect ageing people to engage in a new job that requires a significant amount of travel to and from work.</p> <p>Labour market intelligence is a crucial tool to deal with the challenges of ageing. Although forecasting precise changes in the future is problematic, there are tools that give some direction which are very useful. However, intelligence is not only something at the macro level, it also encompasses skill-matching tools at the individual level. Such initiatives are already present in the region, and this is encouraging.</p>

Source: Martinez-Fernandez, C., et al. (2013), "Demographic transition and an ageing society: Implications for local labour markets in Poland", *OECD Local Economic and Employment Development (LEED) Working Papers*, No. 2013/08, OECD Publishing, Paris. Doi:[10.1787/5k47xj1js027-en](https://doi.org/10.1787/5k47xj1js027-en)

should be clear information provided to all interested parties before changes are introduced. The primary aim is to activate the potential of the ageing workforce, not by simply changing the current situation, but mostly by setting up systems to maintain it in the long term. At the regional level, strategies should take into account the specifics of the local labour market for older workers, and people should be equipped with basic economic skills, which are useful in any business.

- *Labour market intelligence is a crucial tool not only at the national level, but also at the regional and local levels. Forecasting changes and skills matching are initiatives that need to be developed.*

### ***3.4.2 Silver, White and Green Economies***

New areas of growth in which older people can fully participate include activities centred around leisure, healthcare and green growth. In this context, the new approach in any planned strategy for ageing needs to consider the new multipliers of growth: the silver, white and green economies, whose combination may provide systemic solutions for a particular area.

The differences between the three regions are found by looking at which actions they emphasise. Within the Łódzkie region, there is both an urgency to act now, but also an underlying view that change is too difficult, which links to the lack of a long-term perspective and unwillingness to wait for results that may not be immediate. Additionally, and this is probably true not only for Łódzkie, part of this short-term search for solutions seems to include a perception that solutions have to come from government institutions—there is a dearth of strong involvement and activity from other stakeholders. There is a need to develop programmes/initiatives that encourage public involvement, not only by citizens, but also by private firms. At the same time, participants of the workshops found it challenging to define what concrete measures should be implemented in order to achieve the above-mentioned goals. A practical problem is how to convert the desired aims into affordable and easy-to-implement instruments.

The ageing of society is providing a new customer profile, from working older-age people to senior older people, and the aged consumer, all of whose needs are different, meaning the solutions need to take these differences into account. Leisure and health go together in the last part of the life-cycle, which offers an enormous potential for developing new businesses and occupations, and for the ageing-friendly workplace and urban space. Thus, the ageing profile of the regions is actually offering new opportunities for the economy, which need to be encouraged and promoted. The differences should be analysed in terms of scale, pace and spatial differentiation of the population's ageing. All regions are touched by the cohort effect, i.e. by the fact that the post-war baby boomers are reaching the age of 60–65. At the same time, the regions have different opportunities due to variations in seniors' positions due to income, educational attainment and place of residence.

From a practical point of view, the silver economy will be developed primarily in larger cities, led by older people with the financial resources and higher expectations and demands. Thus, the situation will depend on the economic and educational characteristics of the sub-populations in the regions. In comparing the socio-economic characteristics of the older population across the regions, the situation is most favourable in Kraków (due to a better educated and healthier population); Tricity in Gdansk is in second place; and Łódź is lagging behind due to the city's economic history (current senior citizens worked in the textile industry, where there were no special education requirements and where proffered wages and salaries were relatively low, meaning that today their pension benefits are low).

At the same time, incentives to increase the participation of older workers and their motivation to work will provide an ageing society with better overall economic performance and allow for inter-generational knowledge-intensive activities. The transfer of tacit knowledge in the workplace to the new generations of professionals, as an innovative training and skill development method, benefits both older and the younger employees, and also benefits firms and industry at large. There is a need for programmes (such as promoting age management measures, joint intra-generational co-operation, mentoring, coaching and programmes aimed at encouraging a healthy lifestyle) that promote the older workforce within businesses as a valuable resource for training and skill development through the transfer of tacit knowledge at the workplace.

There is an enormous potential for encouraging older and elderly people-inclusive developments. A key factor is to increase the purchasing power of the elderly by raising pension schemes, thus creating a market that in turn can respond to the demands from senior customers. Secondly, dependant on re-engaging older people, is a need to increase the tolerance and acceptance of other areas of society, which will only occur by changing the image of seniors to one that demonstrates that they are fit, well skilled and active in the labour market and society. This could be done in various ways, but starting with educating the younger generation regarding ageing is a must (e.g. special educational programmes at schools, special incentives for teachers and pupils to prepare lessons, initiatives which promote healthy lifestyles programmes and physical activity). Additionally, not only media campaigns are needed, but rather it is important to tell the younger generation about positive examples of people who via their life, their achievements, their healthy and active style of life could experience an adequate quality of life at old age. An answer to the challenges is educational change, which ensures that the next generations of elderly are better educated and more aware of their opportunities and power. However, despite the huge demand already developing, the supply of products and services, and new occupations are currently very limited, which is putting constraints on developing the silver market or the silver industrial ecology. Public policy should promote elderly self-organisation as both good examples of practical institutions that can raise seniors' quality of life, and as an example of non-commercial entities.

Entrepreneurship of the elderly should be promoted too, particularly if the newly established enterprises are quasi-commercial, i.e. production of items is priced

lower than their market equivalent. Also, promotion of volunteering in various spheres, including the long-term care sector, can have positive results for all (European Commission 2013).

There is a need to support the development of the *silver economy* and new financial instruments are needed to encourage the entrepreneurship of older workers as well as younger ones. New professions can also be developed, such as “assistants for cultural advice” or “assistant elderly” to provide flexible solutions for elderly people. The silver economy could act as an umbrella strategy for engaging older people.

However, more challenging is supporting the development of the *white economy*, which sees new professions also needed for the management of disabilities, diabetes, hypertension, smoking and mental health issues. The new health professions are fundamentally different from mainstream healthcare, which is focused on “curing” the patient. In an ageing society, the focus needs to be shifted to “management of symptoms” and management of the variability of symptoms. For example, more professionals are needed to develop monitoring systems and procedures for at-home care, and professions connected with rehabilitation or the use of telemedicine could be significantly expanded. Motivating health professionals to invest in their careers and to innovate is a significant challenge in the nursing area alone. There is also a generation gap in certain professions and a lack of flexibility in the sector, which is already leading to difficulties as the regions are ageing.

The policy implication for this could include financing projects using medical facilities which test the advantages of telemedicine and telecare in regional centres away from the city centres, and particularly at the local levels (*gminas* of regions). In Małopolska, the project ADAT2DC<sup>8</sup> is a good example of such a project, which aims to test and introduce telemedicine and telecare options into the everyday life of older inhabitants of the selected *poviats*.

Additionally, within in the white sector, there is a need to support those who live alone and those who cannot care for older family members because they need to work. Day-visit centres for older people could be more widely developed and used to assist in this sphere, as is currently exemplified by the Daily Centre for Culture and Rehabilitation in Nowa Huta, Kraków.

In terms of supporting the development of the *green economy*, recycling and waste treatment in hospitals could be optimised. Also, linking tourism with leisure activities will offer quality and healthy services to the silver customer. One concrete recommendation from Małopolska that was mentioned during the group discussion is that there could be support for projects/programmes that would support medical institutions such as hospitals in applying for environmentally friendly infrastructure developments, which would in turn provide better management of recycling and waste treatment.

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<sup>8</sup>[www.adapt2dc.eu](http://www.adapt2dc.eu)

### 3.4.3 *Urban and Local Sustainable Development*

In all workshops, local stakeholders indicated the importance of changing the perception of the older population (both among themselves and of the others about them) in order to engage them in the labour market for a longer period of time. A number of practical and good examples of projects and programmes implemented by local government agencies, businesses and NGOs were mentioned, which can be found in the regional working papers (Perek-Białas 2013; Sagan 2013; Szukalski 2013). However, not all projects/initiatives seem to be sufficiently meeting the needs, so more systematic approaches will be needed to meet future demands. Some irregular and unconnected projects could be joined in order to “synergise”.

Engaging the older population is important for economic reasons as well as for social ones (e.g. to engage in social activities in order to generate a sense of belonging to society, which is an important element of well-being for the older population). In this respect, all three workshops stressed the importance of third-age universities and other organizations (libraries, NGOs) and IT training for older people in order for them to stay informed and connected.

Given some of the differences in the urban and rural environment (e.g. the older population in the rural environment may be better supported by existing family systems and therefore may be more resilient than those in the urban environment, but they may not be as well supported by medical/healthcare, education and cultural services as those in the urban environment), recommendations for social policy should encourage the development of different policies and programmes for urban and rural environments in order to better cater to the different needs—thereby taking into account the “territorial” dimension (Martinez-Fernandez et al. 2011). To obtain this aim, updates to strategic planning, at different levels of government, and taking into account demographic changes, are needed. All regions have already noted demographic issues in their strategies, but ageing is still treated with quite differing emphases in these official strategic documents. Comparisons could thus be made between regions, but at the same time, constant evaluation is needed if changes are required.

There is a need to acknowledge that local governments will need to be mindful of the differences in demographic composition within their jurisdiction, even if the overall trend may be characterised as “young” or “shrinking” (e.g. the percentage of 60+ population in districts of Kraków ranges from 14 to 27%) and take appropriate actions based on analysis of different scenarios. This should be accompanied by a cost-benefit analysis, which will confirm the rational and best way to implement solutions. To convince the public of the importance of such changes, there is a need for social consultation and transparency in all dealings. Information on demographic change at the local or sub-local level should be readily accessible to inhabitants and their representatives.

Older people are often seen as burdensome or a threat (e.g. a source of increased medical or care costs), rather than as valuable resources for society (e.g. a stable,

predictable, knowledge-rich and loyal workforce). There is a need to raise awareness to overcome the stereotyping of the older population in society. This could be done in various ways, and not just via media campaigns, but also through education from kindergarten onwards (including school, work and retirement), explaining ageing and its possibilities. The Universities of the Third Age and other such senior citizen-oriented organisations could act as partners, helping to develop a joint curriculum.

From a sustainable development perspective, it is important to ensure that different stakeholders are engaged in decision-making processes and that those who benefit or are affected by certain decisions have ownership of the issue. It appears that in Poland, the historic role played by the central government (e.g. free, state-provided medical services) is affecting the current way of thinking and society's view of how some of these issues should be addressed and dealt with, which in turn makes it difficult to gain support for some solutions.

Given the likely financial challenges associated with an ageing society, the issue of governance may need to be revisited. Citizens may need to acknowledge their role in society in dealing with some of the challenges ahead (e.g. in the form of volunteering or social entrepreneurship or co-operative membership), rather than leaving it all in the hands of the government. Participatory actions and consultations are needed with as many interested groups as possible. A good example of this type of interaction was a consultation programme undertaken by the Ministry of Labour and Social Policy. The programme, which was called the Programme of Activity of Older People (ASOS), was run in the summer 2012 mostly via the Internet, with more than 140 suggestions and opinions expressed by different institutions, organisations and individuals. The ministry was then able to take into account some of these suggestions and recommendations in order to improve the plan and better implement the programme, which had been approved in parliament and was then introduced in autumn 2012.

As has been demonstrated, most initiatives in this area have been supported by the ESF (e.g. the Operational Programme on Human Capital Development). However, the programme and using in future other European funds will not last forever and from an economic sustainability point of view, it is important to diversify the resource base now or to have scenarios for projects which can be continued when funding ceases. Recommendations could be formulated to encourage local governments to diversify the funding base, ensuring it meets legal requirements.

In general, during the workshops, the environmental considerations were quite limited. However, there seemed to be some potential for a green/low-carbon economy in all three regions. Well-designed transport systems, allocation of service points, commercial and residential mixes, management of environmental qualities (including energy, air, waste and water management) are particularly important in preparing for an ageing society. In the case of Małopolska, the issue of the environment was not mentioned spontaneously during group discussion. However, Małopolska was perceived as being a region that is attractive to tourists, meaning it could develop silver tourism (including for religious purposes) and health or spa tourism options. In Łódzkie, the emphasis is laid on geothermic energy as an

important factor, which has had a double positive effect on the competitiveness of the region: improving its attractiveness to tourists and providing renewable energy.

All policy recommendations in this report are formulated bearing in mind that different levels of government are responsible for different policy areas concerning demographic change. This is crucial as the gmina level is/should be the most decisive actor, having the ability to finance or not certain actions or measures. Gminas-level governance should be able to ascertain which funds are insufficient for a certain year. There should be a “buffer” demographic fund, which could temporarily be used to ensure that the primary needs in a particular year can be met; as a kind of solidarity agreement within the region. As was stated in the analysis of local initiatives, some services, if they are really needed, should have the option of being cross-financed, and it is therefore important to look at both horizontal and vertical linkages across different policy fields and use these options to ensure development proceeds.

### 3.5 Family Policy

Demographic change creates an increased risk of social exclusion and affects many different social categories (including older people, homeless people and families).<sup>9</sup>

Stakeholders in all regions agreed that a major weakness of the family policy is underdevelopment of public child-care services. Limited access to low-cost services, with flexible hours of being opened is one of the reasons why many young women decide to only have one child or remain childless altogether. Polish demographers (Governmental Council for Population 2012) have provided many recommendations, some of which could have policy implications:

- longer maternity leave (and also longer paternity leave for fathers)
- income tax deductions to cover the cost of baby-carers
- tax deductions for employers who organise crèches and kindergartens at their workplaces
- more “flexibility” of crèches and kindergartens (e.g. longer operating hours).

The second important factor affecting decisions concerning raising a family is access to housing. High housing prices (either renting or buying) are among the determinants of fertility ageing and fertility reduction. There is a need to enable access to housing—the government programme “Family at own” (*Rodzina na swoim*), which provides government support to pay the interest on a mortgage for young families, is not sufficient. Local authorities own some buildings that are available to rent more cheaply, but social housing overall is undeveloped. One suggestion is that housing could be assigned to rent temporarily by young people who are starting out in a profession or starting a family.

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<sup>9</sup>Based on comments of OECD/LEED expert Ms Antonella Noya/CFE/LEED.

The third factor is insecurity in one's career, which is related to the growing number of temporary and contract positions, and lower paid jobs.

Institutional spaces are needed to deal with inter-generational solidarity, for example:

- *In the workplace*, to allow the transfer of skills and knowledge. This ensures people learn from each other, and is particularly valuable when one generation lacks certain skills such as ICT or new technologies, in which case the older person can have their skills updated with the support of the younger generation. In turn, the younger generation can see and discuss how to deal with different “real working life” situations, which the older generation, having more work experience, has encountered. This would require more flexibility in the workplace. Workplaces should be places where gender solidarity is pursued through different measures in order to ensure a fair balance between family and professional life, such as equal sharing of the care duties between both parents, etc.
- *In the family*, to allow grandparents and even “adoptive grandparents” to take care of the grandchildren. Special allowances could be paid to grandparents, to substitute for potentially lost remuneration, in order to help them when deciding if they wish to undertake “active” grandparenting.
- *In society*, to help to develop a more solid and cohesive society; this could be the ideal platform to foster inter-generational dialogue. Social economy initiatives seem especially tailored for this. Such example as was found in Łódź, where an initiative aimed at encouraging the elderly to utilise day senior centres, at which their involvement with kindergartens has been promoted by encouraging them to assist and supervise the kindergarten attendants.

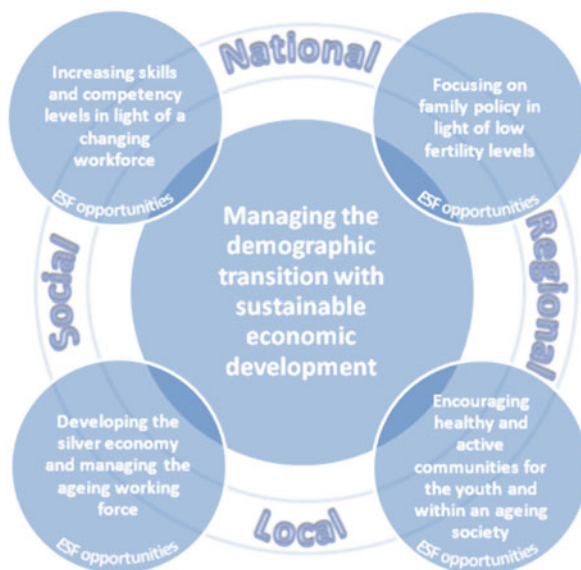
To deal with the consequences of demographic change, it is necessary to “think outside of the box”, and this includes new institutional thinking, as construction of policies in consultation with the users (older persons and families) is needed in order to provide effective services.

### **3.6 Guidelines for Local Management of Demographic Changes in Poland**

Demographic change is a key challenge for local development. Strategic solutions must take into account the interplay of elements within a particular local area of development. At the same time, there are opportunities to be fostered, such as the development of the silver economy of older entrepreneurs, the white economy of medical services for the elderly population and the natural green economy. The Polish case study revealed the complexity of the demographic challenges occurring within the regions, with each region experiencing different issues associated with its socio-economic situation. The Małopolskie and Pomorskie regions are experiencing population growth, population ageing and low fertility, while Łódzkie



**Fig. 3.15** Strategic areas for Poland's demographic transition. *Source:* Martinez-Fernandez, C., et al. (2013), "Demographic transition and an ageing society: Implications for local labour markets in Poland", *OECD Local Economic and Employment Development (LEED) Working Papers*, No. 2013/08, OECD Publishing, Paris. Doi:[10.1787/5k47xj1js027-en](https://doi.org/10.1787/5k47xj1js027-en)



is experiencing population decline and ageing, low fertility, together with youth and young adult health concerns. These differences in demographic situations require a territorial analysis so that regional and local perspectives on policy preparation, development and implementation are co-ordinated with national policy efforts and key European funding.

The OECD "Local scenarios of demographic change" project on Poland and the corresponding final seminar in Warsaw, hosted by the Ministry of Regional Development, 16 October 2012, revealed six key interconnected areas of demographic change for which policy responses were required both at national, regional/local and social levels (Fig. 3.15).

#### 1. *Managing the demographic transition with sustainable economic development*

Demographic changes, such as population decline (in the case of Łódzkie), population ageing, low fertility rates and migration, are key changes in the demography of Poland and the study regions. Due to socio-economic differences, regional systemic and sustainable strategies should first be explored, developed, implemented and reviewed, focusing on the key aspects that make the region unique. Essential measures for a strategy that provides the starting point and guidance for future projects and initiatives for each region include:

- attracting and settling new immigrants
- improving and promoting transport accessibility
- creating a family-friendly community
- supporting entrepreneurship, small and medium enterprises (SMEs), and research and innovation
- stronger local job creation approaches.

## 2. *Focusing on family policy in light of low fertility levels*

All regions are experiencing low fertility rates, at below population replacement levels, which has a significant impact on population growth and economic stability. Each region should have a long-term family policy that outlines the provisions to support parenting decisions. Family policy requires national legislative initiatives to support regional and local efforts. Developing institutional support structures such as financial assistance, social infrastructure and flexible forms of employment and workplaces is essential for promoting family values, monitoring family situations and recognising family problems. Closing the gender gap for equality will also support family development. The ESF has a role in supporting programmes and initiatives not only to manage, but to promote, family support and family creation.

## 3. *Encouraging healthy and active communities and promoting inter-generational solidarity*

All of the study regions are faced with population ageing, with Łódzkie having the added burden of generally poor health within the working-age population. Health promotion and disease prevention are vital for increasing life expectancy, along with creating age-friendly environments and increasing the retirement age and the labour market participation rate. Essential in this process is the financial support of the “white” (health services) sector, developing health clusters, networks and pooling of resources for each region. Pomorskie has additional potential prospects, being part of the Baltic Sea Regional Strategy, wherein there will be opportunities to be part of projects centred around innovation in health and life sciences. There are significant opportunities for the ESF to support projects that encourage healthy lifestyles and active ageing in the study regions. Strategies in the labour market need to address the needs of both younger and older workers, by linking activities for jobs and skills development that can provide an inter-generational mix and knowledge transfer in both formal and informal environments.

## 4. *Developing new areas of economic growth: The silver economy and managing an ageing workforce*

Population ageing is a demographic phenomenon that is occurring across Poland, which is providing both opportunities for the “silver economy” (the ecosystem of services for the older customer) and challenges regarding workforce ageing. The increasing products and services needed for seniors will require a long-term care system, support of NGOs, creation of new leisure and business services and products, as well as providing opportunities for entrepreneurship and SME development in this sector. There will be opportunities for the ESF to provide programmes and initiatives for knowledge, and start-up support for entrepreneurs who are looking to take advantage of the silver economy and NGOs who are providing care services and family support. It is also important to encourage work at an older age, by removing the negative stereotyping of ageing workers, developing programmes to extend working activity (skills and

training), promoting and providing incentives for lifelong learning, supporting entrepreneurship for older persons, mentoring programmes for enterprises, funding initiatives for firms in age management programmes, flexible work forms and support for social organisations in implementing projects that support ageing workers. The European funds could potentially provide significant support for programmes and initiatives implemented by social organisations and regional governments in partnership with enterprises.

5. *Increasing skills and competency levels in light of a changing workforce*

Regional workforces are slowly changing from low-skill needs to medium-high skill requirements. The Łódzkie region, and in particular Łódź city, is located strategically close to Warsaw and with transport links to Europe could be developed as a centre for student education. However, improvement is needed to strengthen the education system—building basic generic skills in the young and promoting further education among young adults. Provision of better working places also needs to be achieved, which links to improving the health conditions for older workers, with the aim of higher retention rates to ensure a longer working life. The role of the civil society organisation that fosters citizen participation in the provision of opportunities to engage young persons, increasing/improving skills and employability is an opportunity for European funds support in youth education programmes. Another avenue for European funds is lifelong learning programmes in various forms, including University of the Third Age (UTA) support.

6. *Delivering smart and co-ordinated policy and planning infrastructure for inclusive communities*

Addressing demographic change requires a policy mix that promotes horizontal and vertical linkages across different policy fields and levels. Dialogue among different ministries (regional development, labour, education, economy, and environment) and across the various levels of policy delivery (state, regional and local) needs to be well developed for the design of short-term and longer term policy instruments. Programmes and initiatives need to be flexible enough to allow local authorities to adjust financial management to fit the local circumstances. Therefore, adapting the urban infrastructure for smaller and ageing communities requires planning to support the adaptation of the built environment and social services so that shrinking budgets can be directed towards areas that are more in need. Competencies and skills of local actors also need to be frequently updated, to be able to use the built environment and physical infrastructure in smart and strategic ways.

7. *Optimising the use of funding: The European Funds as an instrument of change*

The ESF is a vital tool to pursue a territorial approach; however, it requires flexibility to create ownership at the local level and to foster a co-ordinated policy approach, especially within job creation policies and programmes, education and skills development. The report highlights aspects for which the ESF could be utilised to address demographic transitions in family support, research and resources for childcare needs, work-life balance and supporting SMEs in age management.

8. *Fostering cross-regional sharing of experiences and a community of practice on demographic change*

As countries adjust to demographic change, shared information on international experiences can provide information on the causes, effects, strategies and policies and, to some extent, their impacts. However, less effort is directed at providing opportunities for regional knowledge sharing within the country. Poland could rectify this by introducing a “demographic change community of practice”, which could be a web-based mechanism, but with workshops run across the country in order to share and discuss practices and ideas for the present and the future—a community-based knowledge-intensive activity that can inform policy development in this field over the years to come.

### 3.7 Key Changes in Policy Related to Demographic Changes After 2012

Since the research, on which the chapter is based, number of changes has taken place in Poland, such as:

- Demographic trends have not changed significantly. The fertility rate is still very low and some signs of improvement, observed in 2010, already have disappeared.
- Low fertility rate, and policies supporting families became much higher on the political agenda during recent years, within national government as well as regional and local authorities. Family policy is more focused on facilitating career with bringing up children. In the recent years local authorities invested in providing better access to child care services and pre-school education, which was also supported by the national government. Local authorities have undertaken number of initiatives facilitating access to local services.
- At the same time maternity and child-care leaves became extended, more accessible to a larger group of beneficiaries, and more financially advantageous. More generous tax reliefs for families with children were introduced. A direct financial support for families, however, was neglected at the time, except for introduction of a national *Large Family Card*, granting discounts when buying social and commercial services for families with at least 3 children. In 2016 the activities have been complemented with an introduction of the *Rodzina 500+* (*Family 500+*) program, offering financial support to families rising two or more children as well as low income families with one child.
- A noticeable trend in recent years has been growing migration to Poland, mostly from Ukraine (which is related to unstable situation in this country). Authorities issued growing number of permissions for individual workers (48 thousand in 2015 versus 25 thousand in 2014). In 2014, Polish government introduced measures to facilitate the process of obtaining permits for staying and working in Poland for citizens of Eastern European countries (particularly Ukraine) as

seasonal workers. As a result employers filled an increasing number of applications (762.7 thousand in 2015 versus 373 thousand in 2014). Despite some criticism, the migration seems to not have a negative impact on the labour market.

- There has been a growing migration of students from abroad, which became an important element of the strategy of Polish higher education institutions, facing a decrease of number of students due to demographic trends. Polish government introduced incentives for staying in Poland for university graduates willing to work in Poland.
- In recent years the employment rate has been growing and unemployment rate has been decreasing. Despite this the level of poverty in general is rather stable, with some slight increase in case of the extreme poverty rate.
- The employment rate for those aged 50 years and more is much lower than average in EU, and although some progress is observed, this is still below strategic goals. The policy supporting active aging is rather vague and not yet implemented effectively. The governmental programme *Solidarity of generations* could be a roadmap for actions but it seems to be rather an expression of a good set of recommendations rather than a concrete plan with funding for real actions.
- The governmental policy focused on activity of elderly people. A majority of actions, undertaken in recent years, focused on educational (Universities of the Third Age) and social activity as part of the governmental program *Aktywność Społeczna Osób Starszych* (ASOS, *Social Activity of Older People*), mostly due to a strong lobby of social partners. It was only in 2014 that rehabilitation and promoting active living were implemented as part of the *Senior-WIGOR* program. In 2015 the older persons were finally defined (as 60+), which made it possible to clearly specify the senior policy beneficiaries.
- Elderly access to care and health services is still a significant challenge.
- Although needed, these actions seem to have rather limited impact on prolonging working time. The situation can be even worse in forthcoming years, as the new government announced a plan to reverse the increase the retirement age, introduced by the previous government despite strong social resistance.

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# Chapter 4

## Resilient Labour Markets and Demographic Change in Selected Regions of the Netherlands

**Femke Verwest, Philip Taylor, Leo van Wissen, Jouke van Dijk, Arjen Edzes, Marije Hamersma, Frank Cörvers, Andries de Grip, and Jesper van Thor**

This chapter summarises findings from a case study of the Netherlands for the international project on “Local scenarios of demographic change: The impact on local labour markets”. *The project was conducted by the OECD in partnership with the Ministry of the Interior and Kingdom Relations and the provinces of Groningen/ Drenthe, Zeeland and Limburg (Fig. 4.1), with the support of the European Commission DG Employment, Social Affairs and Inclusion.* It shows that the demography of the Netherlands is changing, which affect the labour market (see Abstract). Results indicate that the Netherlands’ response to these demographic changes is well advanced, but additional actions could be undertaken, particularly

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**Fig. 4.1** Map of the Netherlands and the study regions. *Note:* This map is for illustrative purposes and is without prejudice to the status of or sovereignty over any territory covered by this map. *Source:* extracted from [http://d-maps.com/carte.php?num\\_car=4112&lang=en](http://d-maps.com/carte.php?num_car=4112&lang=en), June 2013

regarding the shrinking and ageing society, especially within the context of regional and local labour markets.

Strategic approaches to demographic challenges require a re-positioning of labour markets towards sustainable and resilience-promoting strategies. A “whole-of-government”<sup>1</sup> approach is needed to design economic development policies, population and health policies, labour market policies, and skills and education policies targeting sustainable and resilient communities. Sustainable development for local economic

<sup>1</sup>A whole-of-government approach is defined as “one where a government actively uses formal and/or informal networks across the different agencies within that government to co-ordinate the design and implementation of the range of interventions that the government’s agencies will be making in order to increase the effectiveness of those interventions in achieving the desired objectives” (OECD 2006).



**Table 4.1** A systematic approach to re-positioning labour markets in transition

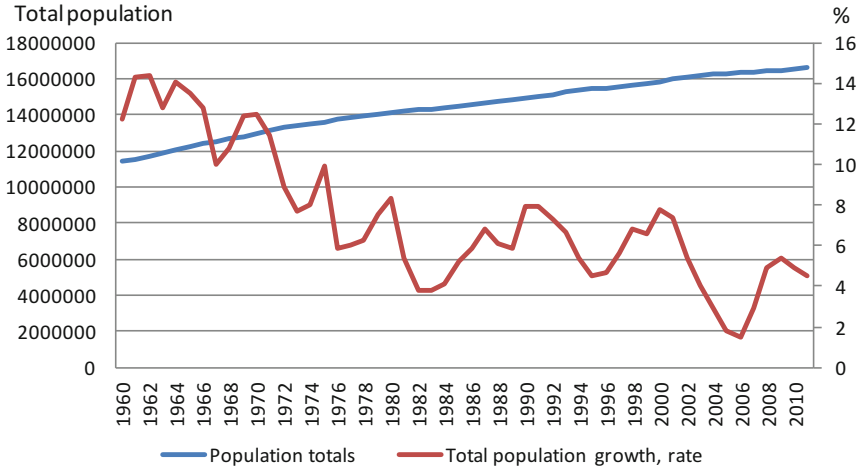
Inter-generational responses to labour market challenges	<ol style="list-style-type: none"> <li>1. Re-position older workers (strategies for lifelong learning and inter-generational skills transformation)</li> <li>2. Integration of the unemployed and lower skilled (strategies for job carving and training)</li> </ol>
Co-operative frameworks towards a dynamic and responsive labour market	<ol style="list-style-type: none"> <li>3. Connection between education and the labour market (strategies to address the mismatch in the labour market, interactions between schools and businesses, educational choices for the young, skills ecosystems)</li> <li>4. Promotion of entrepreneurship and workplace flexibility (strategies for incubators and entrepreneurship education, skills development in small and medium enterprises (SMEs))</li> </ol>
Place-based development for resilient communities	<ol style="list-style-type: none"> <li>5. Identification of new sources of growth (strategies for work ecologies and uniqueness of place)</li> <li>6. Promotion of healthy communities (strategies for good places to live and social capital development)</li> </ol>

*Source:* Martinez-Fernandez, C., et al. (2013a), “Demographic change in the Netherlands: Strategies for resilient labour markets”, *OECD Local Economic and Employment Development (LEED) Working Papers*, No. 2013/13, OECD Publishing, Paris, <http://dx.doi.org/10.1787/5k3xnhvzhmxn-en>

development underlines the need to adopt a long-term approach that considers economic, social and environmental issues at the same time (Martinez-Fernandez et al. 2012). A holistic development approach that integrates economic growth, health, education, environment and other needs can produce higher quality outputs than stand-alone projects operating on a narrow spectrum of deliverables.

The Netherlands could help its communities to adapt to changing demographics by enabling the labour market to become more dynamic and responsive. One approach would be to involve different generations in policy considerations, while emphasising local strengths and weaknesses. This would foster a smarter and more co-operative response and help communities to become more resilient (Table 4.1).

This Chapter describes the demographic developments in the Netherlands in the past, present and future at national, provincial and regional level (see Sect. 4.1). It also describes the policy strategies which are or might be available to adapt to these demographic changes (see Sect. 4.2).



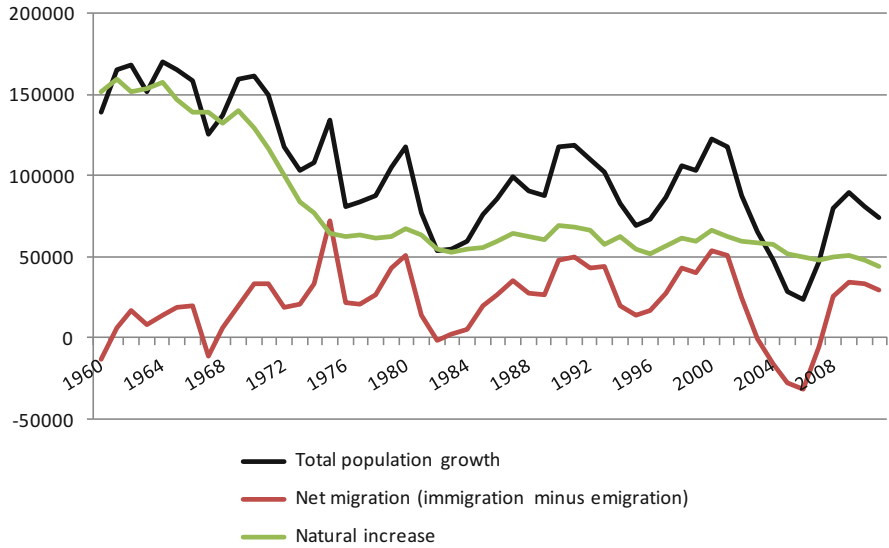
**Fig. 4.2** Total population and growth rates in the Netherlands (1960–2011). *Source:* Based on Netherlands Statistics. Available at: [www.cbs.nl/en-GB/menu/home/default.htm](http://www.cbs.nl/en-GB/menu/home/default.htm). Accessed June 2012

## 4.1 Labour Markets Need to Be Re-positioned Towards Sustainable and Resilient Development

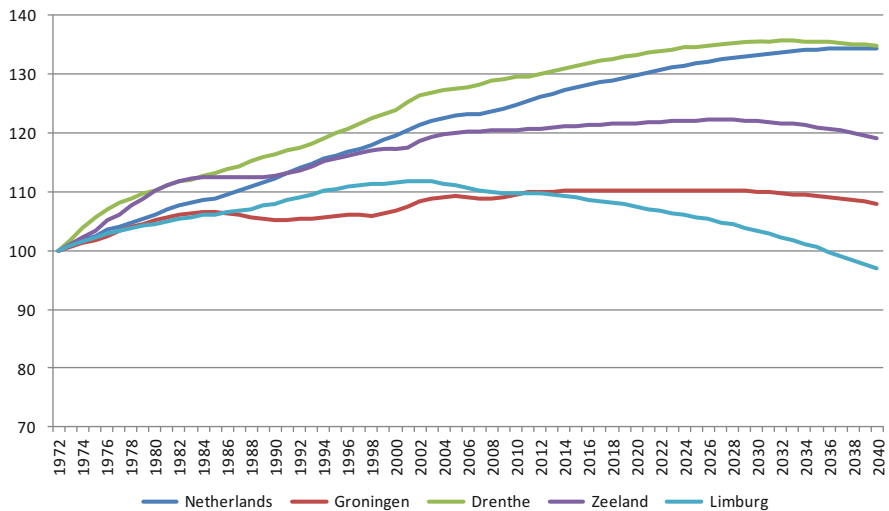
### 4.1.1 Addressing Population Stagnation at the Local Level

The Netherlands must continue addressing demographic change. Although the population is growing, the population growth rate, even if fluctuating considerably, has been declining since the 1960s (Fig. 4.2). The cause of the fluctuating and declining population growth can be linked to natural increase (which is in decline) and fluctuating decline in net migration (immigration minus emigration) (Fig. 4.3). It can be concluded from this that the population growth potential of the Netherlands is greatly dependent on immigration from other countries, which could have significant consequences for skills levels and the labour market environment.

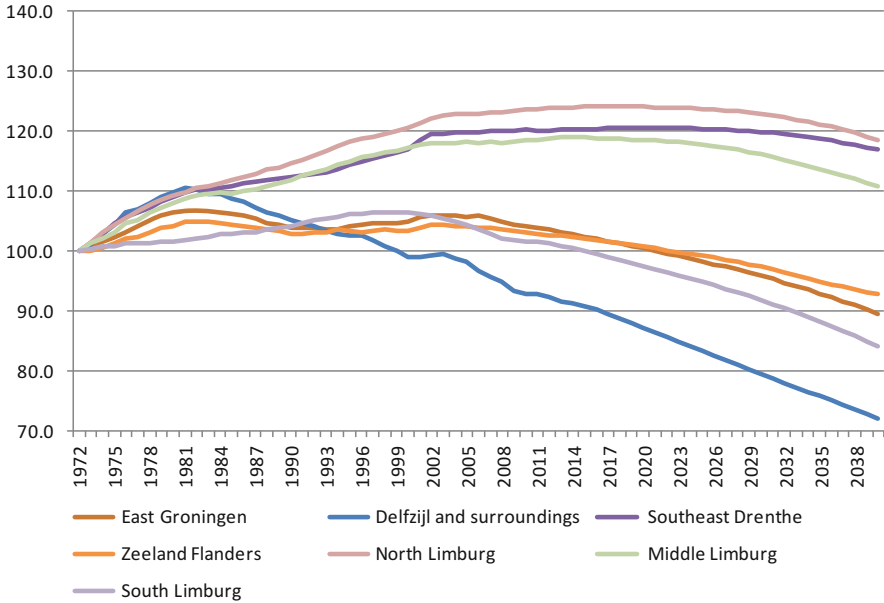
Total population numbers increased by 25.5% from 1972 to 2011, and this increase is expected to continue until it reaches 34% (relative to 1972 levels) in 2035 and then stabilise at 17.8 million. However, regional differences are significant. At the provincial level, population numbers since the year 2000 have started to decline in Limburg, whereas Zeeland and Groningen show stable population figures (Fig. 4.4). At the NUTS III (local) level, those areas located at the periphery of the provinces are facing the sharpest population decline (Fig. 4.5), due to a combination of a stronger ageing process and a negative migration balance, meaning that young people who cannot find jobs (or education) move to areas where there are more opportunities. A continued and co-ordinated policy focus is needed in these peripheral local areas, to strengthen the re-positioning of labour markets to areas in which



**Fig. 4.3** Population growth, migration and natural increase in the Netherlands. *Source:* Based on Netherlands Statistics. Available at: [www.cbs.nl/en-GB/menu/home/default.htm](http://www.cbs.nl/en-GB/menu/home/default.htm). Accessed June 2012



**Fig. 4.4** Total population in the Netherlands and study regions (registered for 1972–2011, projections for 2012–2040). *Note:* 1972 = 100. *Source:* Martinez-Fernandez, C., et al. (2013a), “Demographic change in the Netherlands: Strategies for resilient labour markets”, *OECD Local Economic and Employment Development (LEED) Working Papers*, No. 2013/13, OECD Publishing, Paris, <http://dx.doi.org/10.1787/5k3xnhvzhmxn-en>



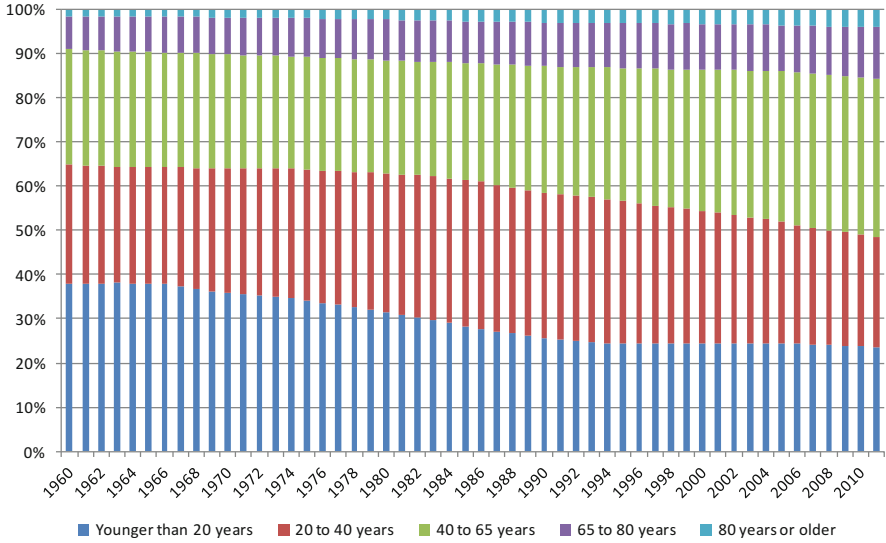
**Fig. 4.5** Total population NUTS III regions in the Netherlands and study regions (registered for 1972–2011, prognoses for 2012–2040). *Note:* Total population (registered from 1972 to 2011, prognoses from 2012 to 2040, 1972 = 100). *Source:* Martinez-Fernandez, C., et al. (2013a), “Demographic change in the Netherlands: Strategies for resilient labour markets”, *OECD Local Economic and Employment Development (LEED) Working Papers*, No. 2013/13, OECD Publishing, Paris, <http://dx.doi.org/10.1787/5k3xnhvzhmxn-en>

the population decline is taking place and encourage personal networks that will lead to the development of resilient communities.

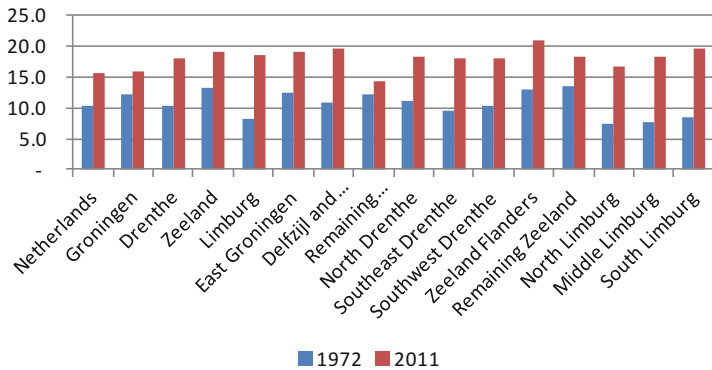
#### ***4.1.2 Developing Inter-Generational Engagement to Stimulate Ageing Local Labour Markets***

Many demographic trends in the regions are explained by the ageing of the population. All four provinces have a median age one to three years higher than the Netherlands as a whole (40 years). Differences are even more significant at the NUTS III (local) level, with Zeelandic Flanders having a median age of 46, and South Limburg and Delfzijl a median age of 45.

Figure 4.6 clearly illustrates significant changes in the age structure in the Netherlands: declining numbers of youth (younger than 20 years old); growth and then decline in the 20–40 year-old age cohort; a significant increase in the 40–65 age cohort; and gradual increases in the 65–80+ cohort. As a result, in the near



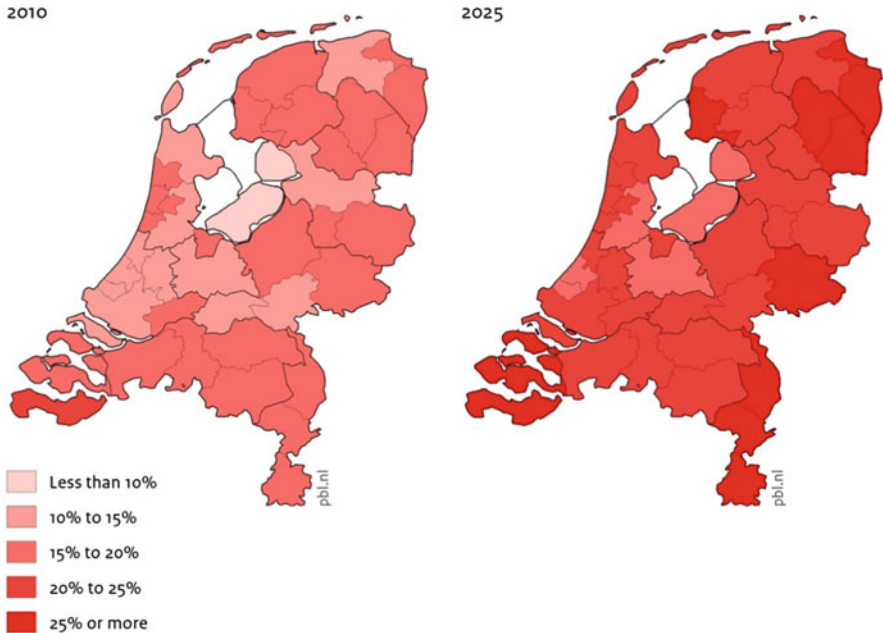
**Fig. 4.6** Age structure trend since 1960 in the Netherlands. *Source:* Based on Netherlands Statistics. Available at: [www.cbs.nl/en-GB/menu/home/default.htm](http://www.cbs.nl/en-GB/menu/home/default.htm). Accessed June 2012



**Fig. 4.7** Population 65 and over as a share of total population in the Netherlands. *Source:* Martinez-Fernandez, C., et al. (2013a), “Demographic change in the Netherlands: Strategies for resilient labour markets”, *OECD Local Economic and Employment Development (LEED) Working Papers*, No. 2013/13, OECD Publishing, Paris, <http://dx.doi.org/10.1787/5k3xnhvzhmxn-en>

future there will be an increasing number of older workers in the labour market alongside a reduction in the number of new entrants.

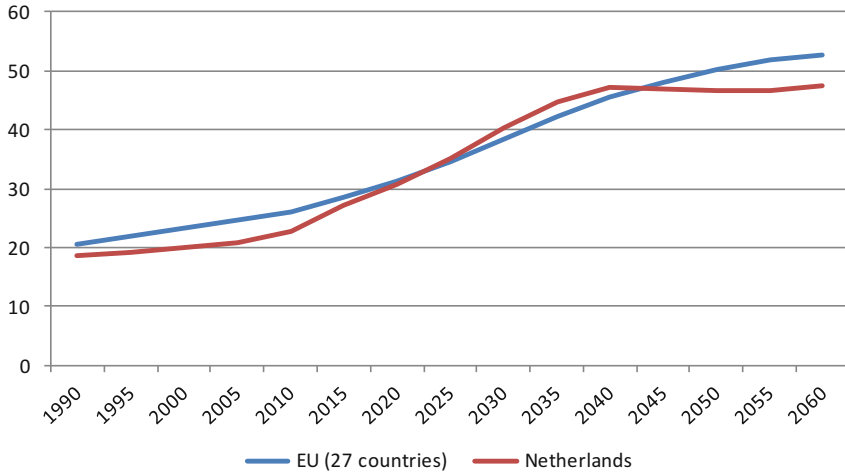
Nationally, the share of the population aged 65 and older increased from 10 to 15% between 1972 and 2011. Some NUTS III (local) regions are already close to 20%: Zeelandic Flanders and South Limburg (Fig. 4.7). Furthermore, in the coming



**Fig. 4.8** Share of the population aged 65 and over, per COROP area in the Netherlands (NUTS III). *Note:* This map is for illustrative purposes and is without prejudice to the status of or sovereignty over any territory covered by this map. *Source:* PBL and CBS (2011), “Regionale bevolkings- en huishoudensprognoses 2011–2040 [in Dutch] [Regional population and household projections 2011–2040]”, PBL Netherlands Environmental Assessment Agency/Statistics Netherlands, The Hague, [www.regionalebevolkingsprognoses.nl](http://www.regionalebevolkingsprognoses.nl); de Jong, A. and C. van Duin (2011), “Regional population and household projections, 2011–2040 marked regional differences”, PBL Netherlands Environmental Assessment Agency, The Hague, p. 11, available at: [www.pbl.nl/en](http://www.pbl.nl/en)

years, the share of people aged 65 and over will continue to increase (Fig. 4.8). Older workers (55–64 years old) will constitute an increasing part of the available labour force. Increasing the employment rates of older people is thus a necessity in order to compensate for the lower number of young people entering the labour market. Developing inter-generational activities that connect the young with the old is a resilient and feasible strategy for local prosperity. The inter-generational approach can be useful in narrowing the gap between different age groups and in helping disadvantaged people to be active in the labour market. This approach is fundamental to increasing civic participation, building communities, improving health and creating better employment opportunities, particularly in shrinking labour markets (Martinez-Fernandez et al. 2012).

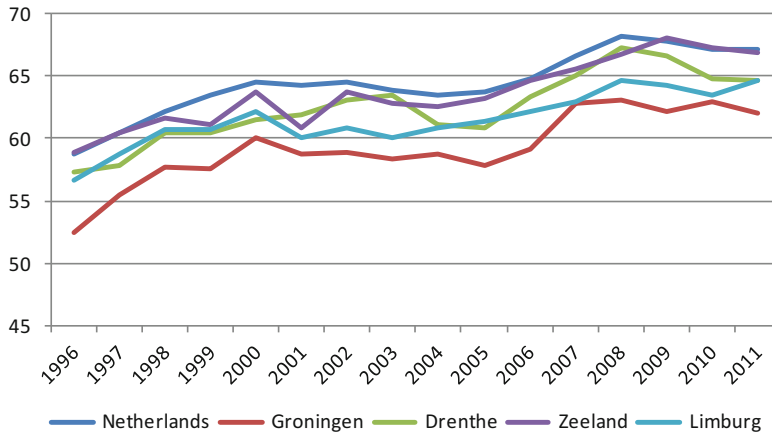
Future shifts can be illustrated by the old-age dependency ratio (population aged 65 and over compared to the population aged 15–64). This indicator shows how demographic changes may influence pension systems in the future. According to Eurostat data, since 1990, the indicator for the Netherlands has been lower than for the EU27. In 2010, the Netherlands’ ratio was 22.82 persons aged 65 and over



**Fig. 4.9** Old-age dependency ratio in the Netherlands (population aged 65 and over compared to the population aged 15–64) comparison with EU27. *Source:* Based on Eurostat. Available at: [http://epp.eurostat.ec.europa.eu/portal/page/portal/statistics/search\\_database](http://epp.eurostat.ec.europa.eu/portal/page/portal/statistics/search_database). Accessed June 2012

compared to 100 persons aged 15–64 years, and for the EU27 it was 25.92. But it is forecast that the indicator will be higher for the Netherlands than for the EU27 by 2025, when it will reach 35.15 and 34.57, respectively. However, as illustrated in Fig. 4.9, the Netherlands is predicted to dip below the EU27 ratio again by the year 2040. This is one of the reasons for Dutch government to increase the retirement age in order to keep the social security system (more specifically the pensions) affordable (see Sect. 4.2.1).

Besides, increasing the labour force participation of older workers is relevant too. It is intertwined with increasing health and active ageing. According to the Active Ageing Index (European Commission and United Economic Commission for Europe 2013) and as introduced in Chap. 1, overall the Netherlands ranks 5th (out of the 27 countries in the European Union), below Sweden, Denmark, Ireland and the United Kingdom. Within specific component indices, the Netherlands ranked 8th for employment, 6th for social participation, 3rd for independent living and capacity for active ageing. However, the Netherlands' score was 38.9% of the theoretical potential for full active ageing engagement of people working or providing skilled inputs, which makes it possible to achieve an improved economy, with increased productivity and lower healthcare costs. Thus, policy efforts need to be directed towards this end in areas such as workplace activation, volunteerism and lifelong learning.



**Fig. 4.10** Employment rate in the Netherlands and study regions (1996–2011). *Source:* Martinez-Fernandez, C., et al. (2013a), “Demographic change in the Netherlands: Strategies for resilient labour markets”, *OECD Local Economic and Employment Development (LEED) Working Papers*, No. 2013/13, OECD Publishing, Paris, <http://dx.doi.org/10.1787/5k3xnhvzhmxn-en>

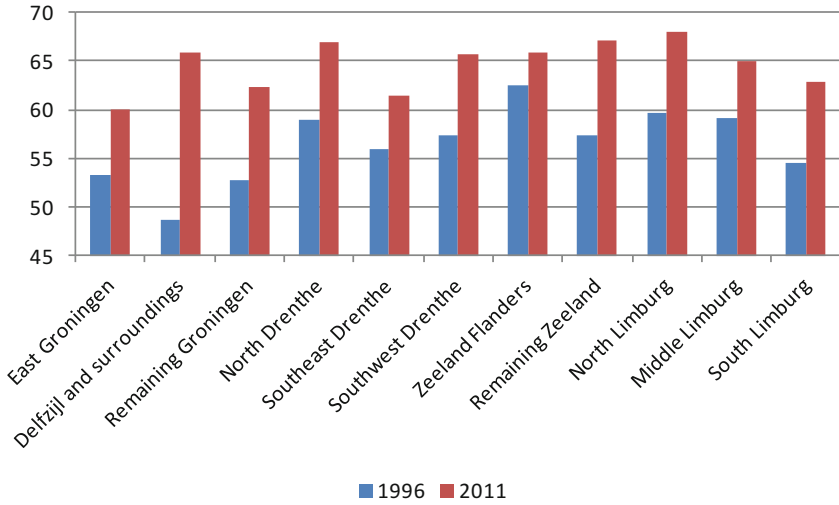
### 4.1.3 Addressing Labour Force Decline in Peripheral Areas

As illustrated in Fig. 4.10, employment rates have risen considerably in the past 15 years in the Netherlands, from 58.7 in 1996 to 67.2 in 2011. In general, Zeeland is very close to the Dutch average of 67.2; Drenthe and Limburg are slightly lower (64.7); while Groningen is substantially behind (60). The participating provinces show similar rising trends, but fluctuations throughout the years are different. Groningen and Drenthe show sharper fluctuations (positive and negative) than Zeeland and Limburg. At the NUTS III (local) level, the picture is varied, revealing some shrinking areas, which have the lowest participation rates (East-Groningen, Southeast Drenthe, South Limburg), while others approach the national average (Zeelandic Flanders, North Limburg). The (NUTS III) region Delfzijl and surroundings, located in the north of Province of Groningen, stands out because of the large increase in its employment rate (Fig. 4.11).

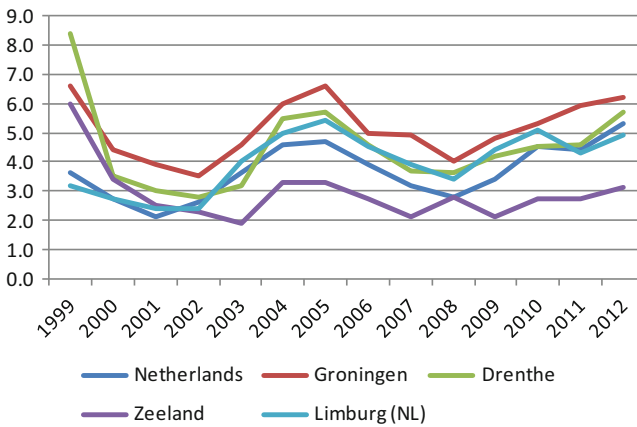
Unemployment rates in the Netherlands fluctuated between 3.6 and 5.3% from 1999 through 2012. Groningen stands out because it has a consistently high unemployment rate (6.6% in 1999 and 2005), followed by Drenthe and Limburg, which were consistently above the national average; only Zeeland was below (Fig. 4.12).

At a regional level, the decrease in the potential labour force (consists of all people in the ages of 20 and 65) is widespread (de Jong and van Duin 2011). In 2010, 24 of the 40 NUTS III (local) areas experienced a decrease in the potential labour force (Verwest and van Dam 2010). According to the regional projections (de Jong and van Duin 2011), the potential labour force is expected to decrease in almost all NUTS III areas before 2040. Peripheral regions in particular, among



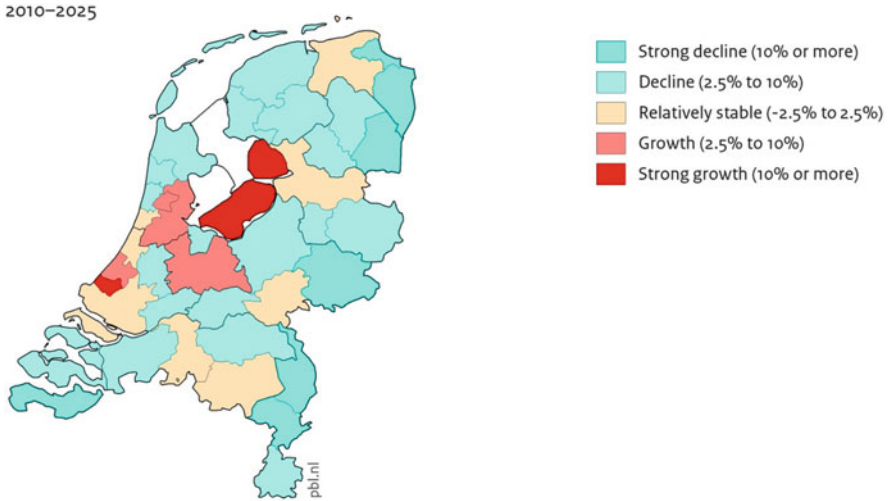


**Fig. 4.11** The Netherlands employment rates in NUTS III (local) regions (1996 and 2011). *Source:* Martinez-Fernandez, C., et al. (2013a), “Demographic change in the Netherlands: Strategies for resilient labour markets”, *OECD Local Economic and Employment Development (LEED) Working Papers*, No. 2013/13, OECD Publishing, Paris, <http://dx.doi.org/10.1787/5k3xnhvzhmxn-en>



**Fig. 4.12** Unemployment rate in the Netherlands and study regions (1996–2011). *Source:* Eurostat. Available at: [http://epp.eurostat.ec.europa.eu/portal/page/portal/statistics/search\\_data\\_base](http://epp.eurostat.ec.europa.eu/portal/page/portal/statistics/search_data_base). Accessed June 2012

which the case study regions, are expected to face a severe decline in the potential labour force. This applies in particular to the Delfzijl region, with an expected decline of over 20%, and Zeelandic Flanders, East Groningen, Southeast Drenthe, North Limburg and Middle Limburg, with a decline of 10–20%. For South



**Fig. 4.13** Potential labour force levels (retirement age 65) per COROP area (NUTS III), 2010–2025 in the Netherlands. *Note:* This map is for illustrative purposes and is without prejudice to the status of or sovereignty over any territory covered by this map. *Source:* PBL and CBS (2011), “Regionale bevolkings- en huishoudensprognoses 2011–2040 [in Dutch] [Regional population and household projections 2011–2040]”, PBL Netherlands Environmental Assessment Agency/Statistics Netherlands, The Hague, [www.regionalebevolkingsprognoses.nl](http://www.regionalebevolkingsprognoses.nl); de Jong, A. and C. van Duin (2011), “Regional population and household projections, 2011–2040 marked regional differences”, PBL Netherlands Environmental Assessment Agency, The Hague, p. 10, available at: [www.pbl.nl/en](http://www.pbl.nl/en)

Limburg, the expected decline is just below 10% up to the year 2025 (PBL and CBS 2011) (Fig. 4.13).

## 4.2 Smart Strategies in Peripheral Regions Need to Continue Through Co-ordinated National-Local Policy Responses

Demographic and economic decline is more likely to occur in peripheral regions with a mono-functional economic structure. Central urban regions with a diverse economic structure and/or regions with large sectors such as business services, industry or logistics, seem to be less vulnerable to demographic and economic decline. Territorial population decline and population ageing has and will continue to have social and economic consequences for national, regional and local labour markets. These include:

- *A decreasing potential labour force*, due to the declining numbers of youth and stagnating working-age population, leading to a dwindling labour supply, a tight

labour market and more competition over workers, or even labour shortages (Verwest and van Dam 2010; Verwest 2011).

- *A decrease in industrial activity and business vitality as firms may relocate or reduce activities* from shrinking regions to growing regions because of labour market issues.
- *A decrease in the population* and the number of households implies a smaller local market and may lead to an oversupply of services and housing. Such a surplus in housing may in turn result in vacant properties.
- *Local services (e.g. infrastructure, transport, care) can become more expensive*, as demand in shrinking regions is expected to increase due to the ageing population, with a simultaneous decrease in labour supply (Verwest and van Dam 2010).
- *Skills ecosystems weaken* as the private sector and skilled labour force are reduced.

Strategic solutions must encompass both local and regional capacities to attract and generate jobs within the national and economic contexts.

Demographic changes such as localised population decline, population ageing and migration are key changes in the demography of the Netherlands and particularly in the study regions. A negative economic situation may increase outward migration. A decrease in the labour force may also lead to a decrease in job growth which, together with an ageing population, could prompt firms to leave shrinking areas and re-establish in growing regions. For localised shrinkage and population ageing, efforts should also focus on encouraging the existence of personal networks and personal attachment to the area (Musterd and Murie 2010; Musterd and Kovacs 2013).

These differences in demographic situations require a territorial analysis so that regional and local perspectives on policy preparation, development and implementation are co-ordinated with national policy efforts. The need is for holistic, but customised solutions, which respond to the specific needs of the local labour market, individual company or person, based on national/regional/local partnerships. The national-local axis requires systematic consideration for policy delivery.

Due to socio-economic differences, regional systemic and sustainable strategies should first be explored, then developed, implemented and reviewed, focusing on the key aspects that make the region unique. Essential measures for a strategic framework that provides the starting point and guidance for future projects and initiatives for *each region* include:

- *Developing regional networks for local action* in order to establish national and regional provincial policy support for demographic transition, and to raise the awareness of local authorities and businesses of the impact this will have on the labour market and economy.

- *Strategies that are place based and highly contingent on context* (instead of place neutral). These should consider economic, social, political and institutional diversity in order to maximise both the local and the aggregate potential for economic development. For example stimulate economic sectors that matches the competences of potential labour force or those that may benefit from projected demographic changes.
- *A territorial approach* that takes in to account the demographic diversity of shrinking and predicted potentially shrinking municipalities. Policies should anticipate and manage demographic decline rather than combat it (Verwest and van Dam 2010). Municipalities, as well as the business community, should manage with fewer people; support people and families who want to stay; and provide a living environment that continues to appeal to existing (and potential new residents), in particular, those in the 20–65 year-old age range, in order to maintain (and potentially increase) the labour force. Local communities should be made aware of not only the challenges but also the opportunities inherent in local shrinkage, through education campaigns and raising awareness of innovative thinking and options (Box 4.1).

#### **Box 4.1 Raising Awareness Through Innovative Solutions in the Netherlands**

“Leve de Krimp!”<sup>1</sup> is a methodology based on an alternate reality game. The game raises awareness of the effects of depopulation on the daily lives of inhabitants in shrinking regions. Current inhabitants are the most important stakeholders in shrinking regions. The game stimulates a sense of ownership and encourages people to start taking action. The methodology is based on current wins and potential options in shrinking areas with smart connections being made between streams, such as knowledge, energy, materials, services and money. The collective intelligence of the community in a shrinking region is thus mobilised and ideas arise that are supported from the bottom-up. In this way, the quality of life within a shrinking region can be kept high—or even made higher—despite a quantitative decrease in inhabitants.

A pilot was implemented by the game developers in the Achterhoek, a region in the east of the Netherlands, which is facing anticipated depopulation. In the pilot (played by three inhabitants over a week and a half), players imagined themselves living in the year 2039. The game created awareness of the effects of population shrinkage and the players thus became motivated to develop ideas and solutions.

“Let’s Shrink!” (“*Leve de Krimp!*”) consists of a generic part of the game, and a specific part. The generic part is the framework of the game, which can be applied to different regions that are experiencing depopulation and ageing. The specific portion is the option to shape the content of the

(continued)

**Box 4.1** (continued)

game to match the culture, mentality and relevant themes within a shrinking region. For the next stage of the project, Studio Papaver has a partnership vision, in which a combination of partners with a strong interest in the generic portion of the game (such as ministries and European programmes), are combined with partners that have a strong interest in the specific part (such as local organisations and private parties). The next step would be to undertake a larger pilot and then fine-tune the game and disburse it for real-world application.

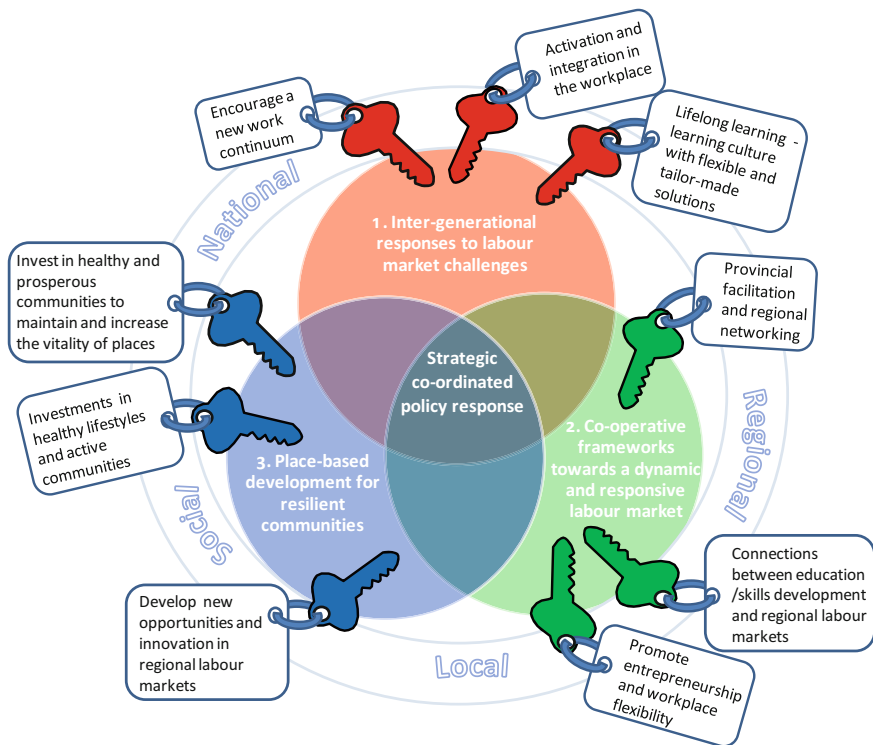
*Note:* 1. The title “Leve de Krimp!” could be translated as “Let’s Shrink!”, it has a positive tone to it. Most of the time the subject of depopulation and shrinkage is labeled as something very negative. “Leve de Krimp!” focuses on an increase of quality parallel to a decrease of quantity.

*Source:* Martinez-Fernandez, C., et al. (2013a), “Demographic change in the Netherlands: Strategies for resilient labour markets”, *OECD Local Economic and Employment Development (LEED) Working Papers*, No. 2013/13, OECD Publishing, Paris, <http://dx.doi.org/10.1787/5k3xnhvzhmxn-en>.

Figure 4.14 illustrates three interconnected policy themes that are vital for regional labour markets attempting to manage a shrinking and ageing society in the Netherlands on all scales (national, regional, local and social): (a) inter-generational responses to labour market challenges; (b) co-operative local frameworks towards a dynamic and responsive labour market; and (c) place-based development strategies for resilient communities.

### 4.2.1 *Develop Inter-Generational Responses to Labour Market Challenges*

There is a tendency for older workers to retire relatively early, either due to attainment of retirement age or a preference to stop working. The Dutch government is in the process of raising the retirement age to 66 years old by 2018 and to 67 by 2021 (VVD and PvdA 2012). Although this will increase labour participation among the older age cohorts, it will not fully compensate for the expected decline in the potential labour force (Commissie Bakker 2008; Verwest 2011; ESPON and NIDI 2010). Nevertheless, the raising of the retirement age will place less pressure on national old-age entitlements and encourage longer and more active working lifestyles. Other reasons for older workers leaving the workplace are: the increasing competition from younger and better educated people; the widespread use of technology; and unsupportive work cultures and behaviours. Encouraging



**Fig. 4.14** Strategic areas of the demographic transitions in the Netherlands. *Source:* Martinez-Fernandez, C., et al. (2013a), "Demographic change in the Netherlands: Strategies for resilient labour markets", *OECD Local Economic and Employment Development (LEED) Working Papers*, No. 2013/13, OECD Publishing, Paris, <http://dx.doi.org/10.1787/5k3xnhvzhmxn-en>

companies to implement age management practices, such as flexible working hours, opportunities for older workers to update their skills, and better health and/or safety programmes, would encourage older workers to stay within the working environment. Examples of specific measures are:

- (a) Encourage a new work continuum ranging from full-time to part-time within the employment options for companies, governments and other sectors so as to extend the length and variety of and engagement in working life, leading to longer employment and increased productivity for people across all sectors. This will extend the working age while allowing people to meet the requirements of family, community and other engagements that, in turn, improve personal, family and community health. Inter-generational engagement in changing working conditions also needs to be taken into account.
- (b) Identify and implement programmes to re-position workers (older and younger) who are un-(or under) employed, especially lower skilled workers, in a concerted effort to encourage their engagement and integration into the workplace

(job carving<sup>2</sup>) and to connect older with younger workers in the workplace. Incentives for continuing to work after age 60, as well as social security systems that are designed to promote working late in life need to be developed, including creating new roles within companies for workers in their later life.

- (c) Foster lifelong learning to stimulate competitiveness, because economies now depend on value that is added from the entire workforce. Regional firms need to invest in and improve their learning culture, with flexible and tailor-made training and skills development programmes, not only for new employees, but also for the older workforce. These programmes will promote inter-generational workforce skill linkages, such as master-apprentice relationships. To increase entrepreneurship or self-employment, educational programmes and business coaching should be promoted wherein the skills of older people are transferred into new opportunities.

#### ***4.2.2 Strengthen National-Local Alignment and Co-operative Frameworks to Create a Dynamic and Responsive Labour Market***

Central governments are no longer the sole provider of territorial policies. Shrinking areas require a coherent policy response from national and local governments to maintain existing jobs, generate new employment and protect vulnerable households. National, regional and local levels of government need to align their various strategies in order to develop a consistent direction to meet development objectives, leverage economies of scale and reap the dividends of joint initiatives that share knowledge and reduce operational overheads. Improving the policy coherence between national and local levels of government (vertically) and co-ordination across different ministries (horizontally) can significantly increase the effectiveness of programme delivery and the quality of the services provided. The interests of national and local governments may not always be in harmony. National considerations, such as increased gross domestic product or improved foreign exchange flows, may not always mesh with local government's concerns, such as local job creation, infrastructure development and social protection programmes. National and local governments need to harmonise development objectives (e.g. enhanced rural access) to avoid redundant programmes and heighten the effectiveness of programmes occupying shared geographic and technical space (e.g. environment). Identification of conflicting national-local objectives (e.g. the planning of rural roads for extractive industries rather than for improving market access of remote rural

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<sup>2</sup>Job carving is a term for customising job duties, such as creating specialist job roles that free up the time of specialist staff or swapping job duties to make the most of individual skills (<http://base-uk.org/employers-recruitment-jobcarving>).

producers) can result in a national-local dialogue that can lead to the development of an innovative win-win situation (OECD/ILO 2011).

Examples of specific measures are:

- (a) Encourage horizontal integration and vertical alignment of policies by promoting co-operative frameworks and regional co-ordinated approaches, such as territorial employment pacts, which are innovative networks that provide an institutional framework and commitment for regional networks targeting employment strategies. With the population ageing, inactivity of older age groups in the workplace will increase the strain on social security and pension systems. According to European Union and OECD (2012), “few older people are involved in entrepreneurship, particularly women, and their enterprises tend to be less growth oriented than firms of younger entrepreneurs. [However] . . . there is a growing population of healthy older people with the skills, financial resources and time available to contribute to economic activity through extending their working lives, including through entrepreneurship”. According to a 2009 Eurobarometer Survey on entrepreneurship, 68.2% of prime aged (20–49 years) people never thought about starting a business and this figure jumped to 86.2% of older people (50–64 years old). While 14.6% of prime aged people were thinking about starting a business, this dropped significantly to only 3.6% of older people. The percentage of people involved in early stage start-up activities was 17.3% of prime aged people and 10.3% of older people. Therefore, “. . . the older an individual gets, the less likely they are to take action on their entrepreneurial intention because they have less time left to enjoy the benefits that the business generates. This suggests that the bulk of those seriously considering starting a business has already taken action and that policy should focus on increasing interest and awareness about entrepreneurship in the third age before people get there” (OECD 2011; Martinez-Fernandez et al. 2011).
- (b) Promote entrepreneurship and workplace flexibility by designing strategies for new work ecologies incubators, entrepreneurship education, skills development in SMEs and the development of senior entrepreneurs. Regional labour markets require a skilled workforce. A decrease in the potential labour force does not automatically result in lower unemployment, but simply a greater mismatch between labour supply and demand (Verwest and van Dam 2010; Verwest 2011). Labour shortages for any particular sector are not only the result of demographic changes, but also of educational and career choices made by young people (Verwest and van Dam 2010; SER 2011). Education should be aimed at encouraging student participation and linkages within the regional economy. There is a need to stimulate businesses and knowledge institutes to develop joint educational programmes (Verwest and van Dam 2010), so that the competences of the available labour force better match current and future labour requirements. Developing widely available valid and reliable information, and career counselling to guide occupational choices, are also needed, such as an entrepreneurship summer school (London Business School, n.d.). To



enable this free flow of information, there is a need for better co-operation between employers, educational institutes, trade unions and local authorities. Universities should adjust their learning programmes to meet the regional needs of the economy, increase international student attendance and encourage a family-friendly environment.

- (c) Promote targeted and better connections between education and skills development and regional labour markets (local skills ecosystem) for job preparation and creation. Re-orient vocational education and training organisations to new skills ecologies.

### ***4.2.3 Invest in Place-Based Development and Foster Resilient Communities***

Demographic changes on national, regional and local scales have important impacts on the labour market, including an ageing workforce, labour shortages and skills gaps, but also provide opportunities in the “silver economy” (the ecosystem of services for the older customer). The growing demand for labour intensive personal services is not able to be managed at the national level by increasing the supply of adequate labour. This applies even more forcefully to regional markets: the relatively large increases in personal and health services in declining and ageing regions have to be met by adjustments in the local and regional labour market. Promoting workforce mobility, flexibility and cross-border collaboration will help support local businesses and economies and will stimulate key economic sectors and encourage entrepreneurship and business opportunities. Places have value and social capital as well as a “right to survive” and investment in lifestyle infrastructure can contribute to increasing their resilience.

1. Develop new opportunities and innovation in regional/local labour markets, targeting new sources of growth such as cross-border programmes, workforce mobility, clustering,<sup>3</sup> new economic growth areas in health and silver work ecologies, entrepreneurship and business opportunities (Martinez-Fernandez et al. 2013b). Another reason for leaving the workplace is often a person’s state of health. The need for new services in areas such as education, entertainment/leisure, information technology, financial services and transport can encourage longer, healthier and more active lifestyles, by creating family-friendly environments and active policies to improve living opportunities for the elderly. The ageing of the population structure will increase demand on new social services and the health sector. The issue becomes greater within territorial areas with shrinking populations, because services might become more

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<sup>3</sup>Clusters are geographic concentrations of interconnected companies, specialised suppliers, service providers, firms in related sectors and related institutions (e.g. universities, R&D institutions, trade associations etc.) in fields that compete but also co-operate (Porter 1998).

expensive for consumers due to an increased demand and a decreased labour supply (Euwals et al. 2009; Verwest and Van Dam 2010). The forms of delivery of care services should have an emphasis on flexibility and financial effectiveness, and promote opportunities for some services to be delivered by social enterprises.

2. Invest in early healthy lifestyles and active communities by incorporating new approaches to the development of infrastructure and the provision of services to the society, designed to reduce medical costs in later life, such as investment in community-based agencies for health and social support, facilitating non-profit/voluntary efforts and fostering local resource sharing.
3. Invest in healthy and prosperous communities to maintain and increase the vitality of places and encourage personal networks and/or attachments, which stimulates the business environment and improves quality of life, entrepreneurship and innovation. All are factors that can foster resilience in shrinking areas. Investments can be in the form of institutional assets that are located in shrinking places and that can act as “magnet infrastructure” (e.g. a new educational institution or a cultural landmark) and digital media in promoting inter-generational (alumni) and social networks. Good communities nurture entrepreneurship and healthy lifestyle living conditions.

### 4.3 Summary of the Main Recommendations in Achieving Growth that is Inter-Generational, Co-operative and Place-Based

Policy focus	Key policy challenges for demographic change		
	Inter-generational responses to labour market challenges	Co-operative frameworks towards a dynamic and responsive labour market	Place-based development for resilient and dynamic communities
National	Continue efforts towards encouraging work and activation of older workers and extension of working life. Invest in healthy lifestyles and active communities. Provide an overall co-ordinated policy response. Design programmes and initiatives that have “territoriality” as a key aspect for implementation.		
Regional	Foster lifelong learning as an education and private sector approach connecting education and skills development and regional labour markets. Promote entrepreneurship and workplace flexibility. Integrate social and employment programmes. Define a regional innovation strategy that provides provincial facilitation and regional networking.		
Local	Develop new opportunities and innovation in local labour markets. Invest in community-based agencies for health and social support. Facilitate non-profit/voluntary efforts to build vital and resilient places. Foster local resource sharing among schools, local government and other local stakeholders.		

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# Chapter 5

## China's Response to Its Ageing Population

Wenmeng Feng

Today, the People's Republic of China is still the most populous country in the world. By the end of 2015, China's population had reached 1.37 billion, accounting for 18.7% of the total world population. Over the past three decades, curbing the excessive population growth has been the priority in the implementation of population-related policies. However, the results of the sixth national census conducted in 2010 reveal that China's demographic situation has witnessed fundamental changes over the past three decades: from 2000 to 2010, the average annual growth rate of the population was only 0.57%, far lower than the 1.07% in the previous decade. Meanwhile, the population structure has also changed considerably: from the second national census in 1982 to the sixth one in 2010, the proportion of children aged 0–14 in the total population fell from 33.6% to 16.6%; that of elderly people aged above 60 rose from 7.6% to 13.3%; and those aged above 65 increased from 4.9% to 8.9%. This shift in the population structure indicates that the falling birth rates and ageing population that beset developed countries have started to affect China. Population ageing has been and will continue to pose serious challenges to the country's socio-economic sustainability.

Although China has witnessed the coming of an ageing society since 2000, it is still at the starting point in addressing population ageing related challenges. This chapter aims at exploring the current extent to which China has been prepared for its population ageing. Section 5.1 provides an analysis of China's recent demographic changes. Section 5.2 gives an analysis of the changing age structure in China's population. Section 5.3 presents China's preparations for its population ageing. Section 5.4, based on the case study of Beijing, gives an analysis on the current and potential needs of the elderly and the supply of old-age people oriented

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products and services. Section 5.5 provides policy recommendations for China to push forward its preparations in dealing with population ageing.

## **5.1 Recent Demographic Changes in China**

In the early 1980s, the family planning policy, which centers on the one-child policy, became a basic national policy of China. Over the three decades since then, this policy has not only changed the course of China's population transition but has also had a tremendous impact on China's socio-economic development. After the change from a high fertility rate to a low fertility rate, the situation of China's population is significantly different from what it was more than 30 years ago. The major changes that have occurred over the past three decades are summarised below (China Development Research Foundation 2012).

### ***5.1.1 Towards Negative Population Growth***

Although China remains the most populous country in the world, the share of its population in the world population has dropped from a peak of 22.7% in 1974 to 19.2% in 2011 (Table 5.1). The current population growth in China is very slow: the Chinese population only increased by 73.9 million between 2000 and 2010, at an annual rate of 0.57%, while the world population grew at more than twice that speed during the same period (Feng 2012a).

If the current low fertility rate continues, China's population will turn to negative growth after 2030 and, by the end of the twenty-first century, it is predicted to decrease to 1086 million (United Nations 2013). Although China's population in 2100 will be as large as it was in 1985, the age structure will be fundamentally different. Of the 1062 million Chinese citizens in 1985, people aged 0–14 accounted for 30.9% while those over 65 represented only 5.6%; of the 1086 million in 2100, the proportion of the former will have dropped to 15.2% while that of the latter will have risen to 28.2%, which means a seriously aged population (Fig. 5.1) (United Nations 2013).

### ***5.1.2 Approaching Lowest-Low Fertility Rate***

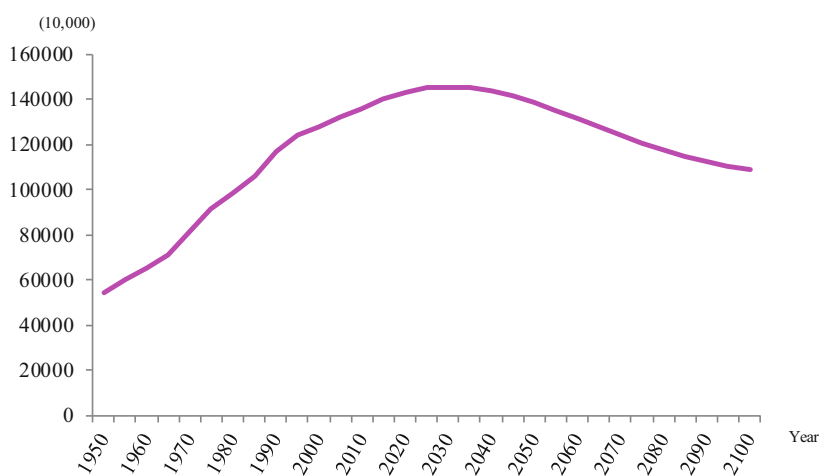
Despite widespread controversy over the quality of birth statistics, the low birth rate in China is already an indisputable fact. An estimation directly based on the data of the sixth national census gives China's total fertility rate (TFR) as 1.18; considering the under-reporting of births, the current TFR is probably below 1.5.

**Table 5.1** China's population and the world population

Year	World population (hundreds of millions)	China's population (hundreds of millions)	Proportion of China's population (%)
1959	30	6.62	22.07
1974	40	9.09	22.73
1987	50	10.93	21.86
1999	60	12.59	20.98
2011	70	13.47	19.24

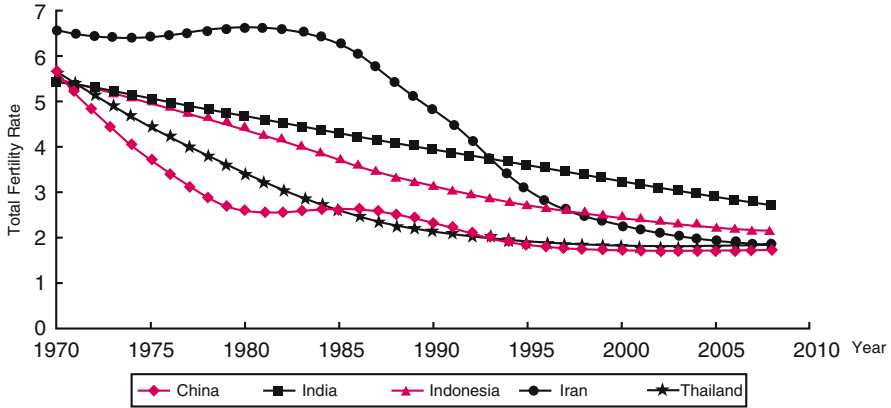
Note: The Chinese population is for the end of the respective years

Source: UNFPA (2011), *The State of World Population 2011*, United Nations Population Fund, New York, Available at: [www.unfpa.org/public/home/publications/pid/8726](http://www.unfpa.org/public/home/publications/pid/8726), Accessed June 2012; National Bureau of Statistics of the People's Republic of China (2011), *Results of 2010 Population Census of China*, China Statistics Press



**Fig. 5.1** China's population growth (1950–2100). Source: United Nations (2013), *World Population Prospects: The 2012 Revision Population Database*, United Nations, New York. Available at: <http://esa.un.org/unpd/wpp/index.htm>. Accessed June 2012

In its reports published in the past few years, the United Nations has lowered its estimation of China's birth rate. The data published in *World Population Prospects: the 2010 Revision* (United Nations 2011a) and *World Fertility Policies 2011* (United Nations 2011b) show that the TFR of the world in 2005–10 was 2.5; the TFR of developed countries was 1.7; that of developing countries was 2.7; that of the least developed countries was 4.4; and that of China was 1.6 (Fig. 5.2). Some researchers believe that China's actual TFR is even lower (Guo 2012; Yong 2012).



**Fig. 5.2** Change of fertility rate: Comparison between China and other countries (1970–2010). Source: Feng Wang (2011), “China’s demographic transition in comparison with other countries and the gain and loss of demographic dividend”, Background Report of *China Development Report 2011/12: Demographic Changes and Policy Adjustment*, CDRF

All these indicate that China’s fertility rate is not only below the average of developed countries, but also approaching lowest-low fertility rate.<sup>1</sup>

### 5.1.3 Imbalanced Population Pyramid

As the result of the rapid decline of fertility rate, the sustained low fertility level and the prolonging of lifespan, the rapidity of ageing and the decrease of children have brought about a significant change to the form of China’s population pyramid. According to the sixth national census in 2010, the proportion of children was 16.6% and that of people aged 65 or over was 8.9%; in contrast, during the third census in 1982, the numbers were 33.6% and 4.9% respectively (NBS 2011). Such an about-change has inevitably led to a structural consequence: the decrease of the number of new labour and the increase of the number of elderly people within society. The former will bring about a significant turn in the supply and demand of labour, while the latter will make ageing become “the order of the day in Chinese society”. Over the past three decades, population changes have created an abundant demographic dividend for China’s economic growth. However, with the acceleration of population ageing, the decline of the dependency ratio came to an end in 2011, which means the disappearance of the demographic dividend.

<sup>1</sup>According to the potential demographic and socio-economic consequences, low fertility rates can be divided into low fertility (1.5–2.1), very low fertility (1.3–1.5) and lowest-low fertility (below 1.3) (CDRF 2012).



### 5.1.4 *Massive Population Migration*

China is experiencing the largest migration of population in human history. The results of the sixth national census show that China has a floating population<sup>2</sup> of 221 million. The 2011 “Report on the Development of China’s Floating Population” released by the National Population and Family Planning Commission reveals that, over the past 3 years, the floating population has grown by 10 million annually (NPFPC 2011).

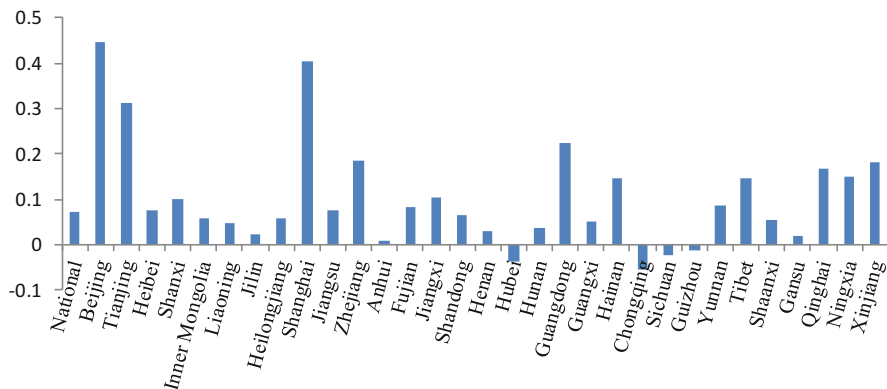
The massive movement of population has become one of the most important population phenomena with an impact on China’s socio-economic development. The predominant trend is for the population to flow from the countryside to cities and from the central and western regions to the eastern region. The highly dynamic population movement is not only changing the distribution of China’s population in rural and urban areas, but is also influencing its regional distribution. In particular, since the beginning of the twenty-first century, a significant change has taken place in China’s population map.

China’s rural-urban distribution of the population has undergone a historic change. By the end of 2011, China’s urban population had accounted for 51.3% of its total population, which means that China is no longer a country with a predominantly rural population. The rate increased by 1% each year between 1990 and 2000, and has risen by 1.3 percentage points each year in the past decade. By the end of 2015, 56.1% of China’s population was living in urban areas. Given the very low natural growth rate of the urban population, there are three major ways for the Chinese population to be urbanised: (1) the migration of people from rural areas to urban ones; (2) the expansion of cities; and (3) the formation of new towns and cities. Among these factors, the first is currently the most important factor contributing to the rapid urbanisation. The enormous outflow of young members from villages has accelerated the population structural change in China’s rural areas. As a result, rural areas in China are facing significant challenges in dealing with population ageing.

In addition, there has been a further concentration of population toward the eastern region. In 2010, the people living in the eastern region accounted for 38.0% of the permanent residents across China, up 2.41 percentage points from 2000. Those who lived in the central region represented 26.8%, marking a drop of 1.08 percentage points. Those who lived in the western region represented 27.0%, marking a drop of 1.11 percentage points. Those who lived in the northeast represented 8.2%, marking a drop of 0.22 percentage point (NBS 2011). In the eastern region, the fastest population growth has taken place in Guangdong, Shanghai, Beijing, Zhejiang and Tianjin. The Pearl River Delta, the Yangtze River Delta and the Beijing-Tianjin region have become the regions with the

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<sup>2</sup>This refers to the people whose place of residence differs from their registered residence and who have been away from the latter for more than 6 months (excluding those who have been so in urban jurisdictions).



**Fig. 5.3** Increase in the number of permanent residents in different parts of China (2000–2010). Source: National Bureau of Statistics of the People’s Republic of China (2011), *Results of 2010 Population Census of China*, China Statistics Press

highest density of population and cities in China. In contrast, the numbers of permanent residents<sup>3</sup> in the central and western provinces of Hubei, Sichuan, Guizhou, Anhui and Gansu have decreased (Fig. 5.3).

Enormous migration has stimulated the industrial transfer of labour and economic growth, and contributed to China’s social change and institutional reform. However, the conflict between the massive flow of population and the current social welfare system based on the household registration system has led to a series of social problems, such as tens of millions of “left-behind children” and “migrant children”,<sup>4</sup> the unfair distribution of public service resources and troubles with the social security system. Most migrants have yet to enjoy equal rights in comparison with local residents in terms of education, housing and healthcare. In this sense, China is in the process of incomplete urbanisation or “semi-urbanisation”.

<sup>3</sup>Permanent residents refer to those who live in a particular area on a permanent basis. The definition of “permanent residents” for the sixth national census includes the following: people whose *hukou* (registered permanent residence) is in an area and who live there; people whose *hukou* is outside an area but who have lived there for over 6 months; people who live in an area and whose *hukou* is yet to be established; and people whose *hukou* is in an area but who have been away for less than 6 months.

<sup>4</sup>“Left-behind children” and “migrant children” are two special groups emerging during China’s rural-to-urban migration. “Left-behind children” refers to those who have stayed in the hometown in spite of their parents leaving as migrants. In contrast, “migrant children” refers to those who have moved together with their migrant parents.

### 5.1.5 “Hollowing-Out” of Rural Areas

Since the 1990s, while providing cities with abundant labour, the massive outflow of young adults has led to the “hollowing-out” of rural areas.<sup>5</sup> The hollowing-out of rural areas has seriously affected rural productivity, causing the waste of land resources and the ageing of rural labour. China has a total of 640,000 administrative villages and 3.3 million natural ones, with a housing area of 182 m<sup>2</sup> to each rural person, way beyond the state-prescribed upper limit of 150 m<sup>2</sup> for per capita land for construction in rural areas. Scholars have estimated that a net increase of about 13% in arable land across the country can be achieved through improving and re-cultivating scattered, abandoned and idle rural land for construction (including homesteads), building residential areas, and providing supporting public service facilities (Liu and Yu 2010).

The massive outflow of young adults has led to the ageing of rural labour and a sharp decline in the dynamism of rural development.

### 5.1.6 Spreading Shortage of Migrant Workers

Labour surplus has always been an important precondition for the Chinese government in the formulation of socio-economic development policies, and it had always been believed that there would be an infinite supply of surplus rural labour. In the spring of 2004, however, a shortage of migrant workers began to emerge along the southeast coast. In the years that followed, such shortage not only grew worse in the Pearl River Delta and the Yangtze River Delta, but it began to spread to the central and western regions as well. According to estimations in relevant research, rural labour represented 67.3% of all employed Chinese citizens, migrant workers accounted for 41.3% of all employed people in towns and cities, and rural labour accounted for 51.4% of all non-agricultural employees (CDRF 2012). Despite the significant disparity in the estimations of the quantity of surplus rural labour, today most Chinese researchers agree on the following three important facts:

1. Transferrable rural labour is declining. Of those who have not yet left their native places to find work, about 30 million, or 40% of the transferrable labour, are still likely to do so.
2. The number of young adults in rural areas is declining, with those aged under 30 representing less than quarter of all rural labour.

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<sup>5</sup>The “hollowing-out” of rural areas is an undesirable evolution of the rural area system during the rural-urban transformation. It includes the “hollowing-out” of rural industry and infrastructure as well as that of rural land and population. In essence, it is the overall degeneration of the socio-economic functions of rural areas (Liu and Yu 2010).

3. The quantity of new rural labour is declining. China's labour is undergoing a historic change in terms of the relationship between supply and demand, and the infinite supply of surplus rural labour is ending.

### ***5.1.7 The One-Child Generation***

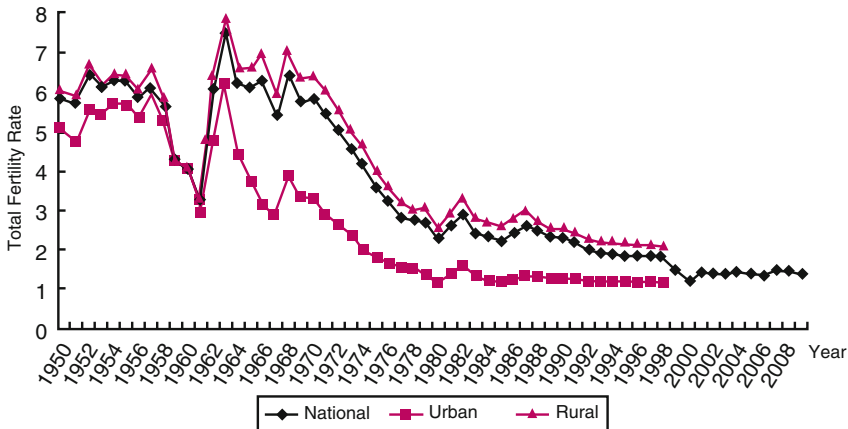
In 1980, the one-child policy was introduced in China at the national level. The implementation of the one-child policy has given rise to two population groups: the “one-child” group and the group of their parents. A generation formed by “one-child” is a unique population phenomenon in China. Since the adoption of the one-child policy in 1980, the total number of “one-child” families has reached 120–130 million, 70% of them having been born in cities. This means that the number of “one-child” and their parents has reached 360–390 million (CDRF 2012).

Since the very beginning, the “one-child” as a special group has had an impact on many aspects of Chinese society and the present and future of China. Negative impact from indulgence has always drawn universal attention from society and constituted a factor not to be neglected in education and population quality. Since the beginning of the twenty-first century, those “one-child”, known as “little emperors”, have reached working age and marriageable age. As a result, their influence has begun to expand from family and education to wider socio-economic areas.

In addition, the existence of the “one-child group” has brought about a series of changes in family structure, relations and way of life. Some problems have aroused general concern in society, such as the family structure, inter-generational relationships, and the impact on familial provision for the elderly and related support reflected in the “four-two-one” structure. A “four-two-one” family refers to an inverted pyramidal family structure made up of four grandparents, one couple and their only child. Another issue of particular concern is that the disability or death of an only child can inflict enormous pain and incurable trauma on the parents.

Of the above seven demographic changes, some are directly related to the family planning policy while others are due to the urban-rural dichotomy resulting from the household registration system (Feng 2012b). Awareness of these changes is indispensable in an analysis of China's current population situation.

Through the above analysis, it is obvious that there has been a fundamental change in the major challenges confronting China's population. Today, the imbalance of population structure, quality and distribution has replaced excessive growth as the major population problem. Among the current challenges, population ageing is becoming the most serious one.



**Fig. 5.4** Declining fertility rates in urban and rural China. Source: Calculations based on the China Population Information Research Center's database for years before 1998 and the population sample survey results for years after 1998

## 5.2 Age Structure Changes and Population Ageing in China

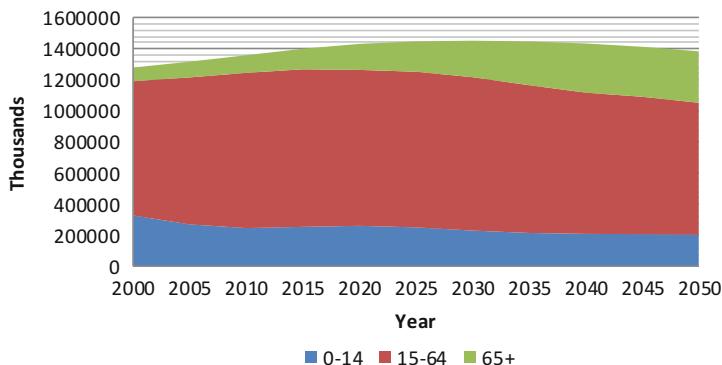
### 5.2.1 The Changing Age Structure in China's Population

Since the 1970s, as the family planning policy is gradually implemented, the TFR has seen a significant decrease. It fell from 5.8 in 1970 to 2.3 in 1980, 2.1 and even lower in 1992, 1.8 in 2000 and below 1.5 in 2010 (Fig. 5.4). Along with the declining fertility rate is the prolonged life expectancy, which reached 74.8 years in 2010. Today, China has entered the third stage of demographic transition featuring low birth and death rates (CDRF 2012).

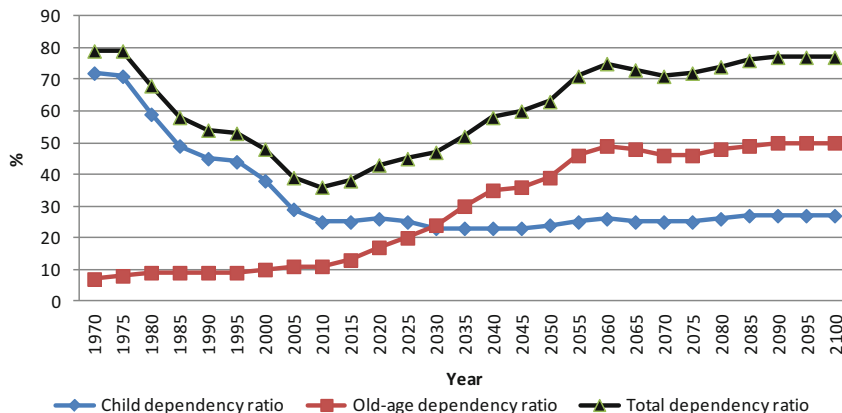
During both the slow and upcoming negative growth of the total population, the number of children (0–14) has been on the decline, the working-age population (15–64) has shown a downward trend, and the elderly population (65+) has been growing fast (Fig. 5.5).

With the acceleration of population ageing and the slowing growth of working-age population, China's total dependency ratio bottomed out at 0.38 in 2011, and began to rise slowly afterwards. It is expected to reach 0.4 in 2020 and exceed 0.5 in 2033 (CDRF 2012). According to the United Nations' projections (2013), without a substantial rebound in fertility rate, China's dependency ratio will continue to grow even after 2050, and reach up to 0.8 in 2100. That means every four working people will have to support at least two aged people and one child by 2100 (Fig. 5.6).

The changes in the sizes of the three age groups in both absolute and relative terms are leading China's age structure in an undesirable direction, and will ultimately inflict a negative impact on the sustainability of the country's economic and social development.



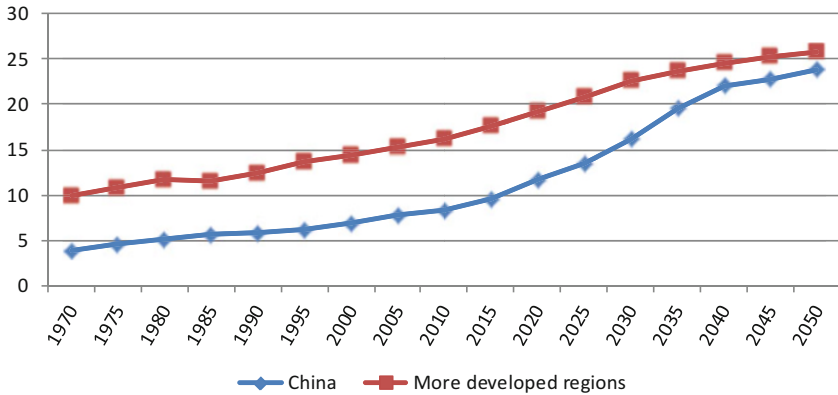
**Fig. 5.5** China’s population and age groups (2000–2050). Source: United Nations (2013), *World Population Prospects: The 2012 Revision Population Database*, United Nations, New York. Available at: <http://esa.un.org/unpd/wpp/index.htm>. Accessed June 2012



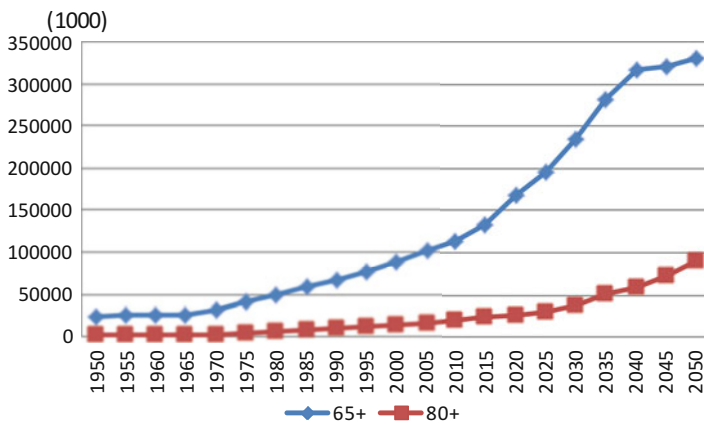
**Fig. 5.6** China’s dependency ratios (1970–2100). Source: United Nations (2013), *World Population Prospects: The 2012 Revision Population Database*, United Nations, New York. Available at: <http://esa.un.org/unpd/wpp/index.htm>. Accessed June 2012

### 5.2.2 Population Ageing in China

China is one of the fastest ageing countries in the world. At the end of 2015, 10.5% of the population in the Chinese mainland were 65 or over. Since 2000, two major changes have occurred in population ageing: first, ageing has accelerated; and second, the speed is higher than expected. The proportion of population aged 65 or over is likely to exceed 15% in 2027, 20% in 2035 and 24% in 2050, approaching the level in more developed regions (Fig. 5.7) (United Nations 2013).



**Fig. 5.7** Population ageing in China and more developed regions (1970–2050). Source: United Nations (2013), *World Population Prospects: The 2012 Revision Population Database*, United Nations, New York. Available at: <http://esa.un.org/unpd/wpp/index.htm>. Accessed June 2012



**Fig. 5.8** Older population growth in China (1950–2050). Source: United Nations (2013), *World Population Prospects: The 2012 Revision Population Database*, United Nations, New York. Available at: <http://esa.un.org/unpd/wpp/index.htm>. Accessed June 2012

As baby boomers of the 1950–1960s gradually come into their old age, China’s older population has been experiencing a rapid increase. In 2011, 123 million people in China were aged 65 or over. As predicted by the United Nations (2013), the figure will exceed 200 million in 2026, 300 million in 2038 and 330 million in 2050, 90 million of whom will be aged 80 or over (Fig. 5.8).

Population ageing has become a common threat for most developed countries. However, compared with developed economies, China may face a bigger challenge given the fact that it is getting old before getting rich. From the perspective of economic growth, getting old before getting rich has some important implications.

On the one hand, a smaller increase of the working-age population and fast economic growth has led to labour shortage, and rising wages. Rising labour costs undermine the comparative advantage of labour-intensive industries, making it imperative to upgrade the industrial structure towards capital- and technology-intensive industries. On the other hand, China's per capita income has just reached the upper-middle level, and it has not yet gained notable advantage in physical capital. In addition, it still lags far behind developed countries in terms of labour quality and the development of science and technology. Therefore, it has little comparative advantage in capital- and technology-intensive industries. To some extent, it is justifiable to summarise the potential negative impacts of population ageing on economic growth as follows:

1. China will lose the opportunity of overtaking developed countries as a late bloomer.
2. China will lose its advantage over other developing countries that still enjoy a demographic dividend.
3. China has not yet gained the advantage in technology and innovation of other developed countries.

In other words, China is losing its advantages over both high-income and low-income countries, which makes it more imperative to change the pattern of China's economic development.

Population ageing affects not only economic growth but also has a far-reaching influence on social development. The size of China's older population is growing. Elderly people are living longer and their share in the total population is on the rise. Population ageing increases a family's burden of taking care of elderly people. It has been a tradition in China for most old people to live with and be looked after by their children. However, with the change of family structure and society development, particularly as the parents of the one-child generation enters old age, more and more families will face a shortage of "manpower" for taking care of the elderly. According to the 2010 survey on the urban and rural older population in China, 22.7% of elderly people in China were unable, or not fully able to, take care of themselves, and had to rely on other family members. Attending to the elderly constrains the labour participation of the people undertaking the responsibility, especially women. According to a 2005 survey on the factors influencing the health of elderly people, respondents looking after their parents worked 1.4 hours less every week, and the figure was 7 hours for females living with their parents (Yi et al. 2010).

In addition, population ageing changes the inter-generational relationships. With a low fertility rate, the traditional mechanism of family support for the aged has been weakened and a social support system is in place to take that role. The inter-generational transfer of wealth and public resources causes the change of inter-generational relationships. In the context of a soaring proportion of one-child families, accelerating population ageing and social transformation, inter-generational relationships will become more complex in China.

However, China is not yet prepared for the oncoming ageing society:

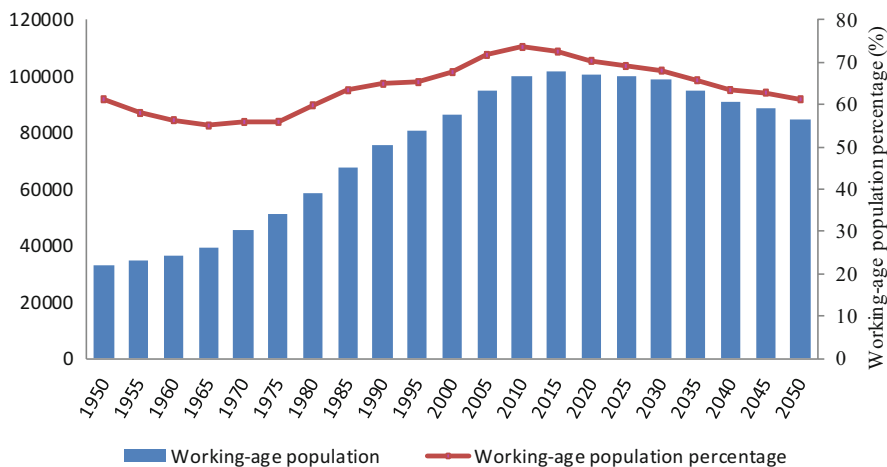


- First, institutional arrangements lag behind. Various systems, including the social pension system, the medical insurance system, the retirement system, the personal income tax system and other related social policies and public service systems, are all far from meeting the needs of an ageing society. From this perspective, the tension between ageing and social development can be described as “ageing before adequate development”. In other words, China is under-prepared for an ageing society. However, population ageing will be a hard fact that China has to face, and the building and reform of all systems concerning people's well-being should be based on this fact.
- Second, China is not prepared financially. On the one hand, public spending on old-age support is limited. Only a small portion of public spending is on old-age pensions and a considerable proportion of aged people are paid a small pension. In 2011, the pension replacement rate of enterprises was merely 42.9% and the average pension in rural areas was only CNY 55 per month. On the other hand, the current social pension system faces a potential crisis: pension funds in nearly half of the provinces in China cannot make ends meet (Zheng 2011), and the returns on pension investment are low. Below 2%, the average annual rate of return is even lower than the inflation rate, which means that pensions are actually shrinking. In the meantime, however, the older population is increasing, and the numbers of those covered by the pension system will accelerate. This means that there will be a sharp increase in the number of people qualified for drawing a pension, which will be a hard blow to China's social pension system.
- Third, China's public service system is not yet developed. Currently, the needs of the elderly are not taken into account in urban planning, infrastructure construction, etc., making access to public services most limited for elderly people. In rural areas, in particular, as most young people are not at home and there are almost no facilities for the aged, the elderly face greater challenges in their daily life. Therefore, China still has a long way to go to achieve active and healthy ageing that is advocated by the international community. It may start with building an equitable and sound public service system catering to the needs of an ageing society.

### ***5.2.3 Implications of Population Ageing on the Labour Market***

China's fertility rate started to plummet in the 1970s and stayed at a low level for a long time. The low birth rate is sure to exert its impact on the labour market, as evidenced by the declining size of the working-age population. China is expected to experience the following changes to the working-age population in the future.

First, both the size and the proportion of the working-age population have reached a turning point. At the end of 2011, the proportion of the working-age

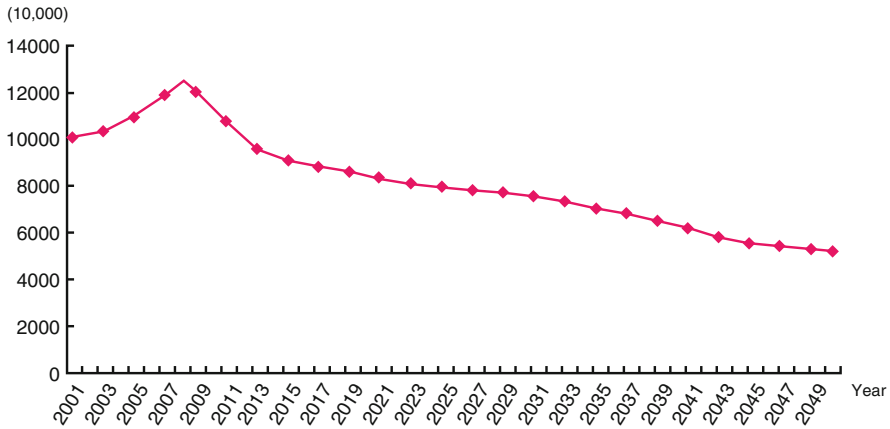


**Fig. 5.9** China's working-age population (1950–2050). Source: United Nations (2013), *World Population Prospects: The 2012 Revision Population Database*, United Nations, New York. Available at: <http://esa.un.org/unpd/wpp/index.htm>. Accessed June 2012

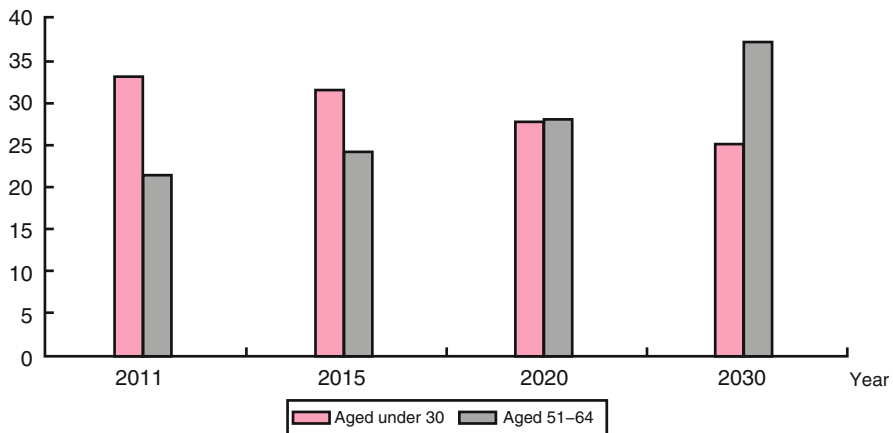
population was 74.4%, 0.1 percentage point lower than in 2010. At the end of 2012, the working-age population was 937 million, 3.5 million fewer than 2011. Those decreases, though minor, are a sign that both the absolute number and the share of working-age population started to and will continue to fall. In 2050, the proportion will be below 60%, the level it was in 1980. However, in 1980, working-age people were mainly striving to raise children, while after 2035, the dependent population will mainly be elderly people. According to the predictions of China Development Research Foundation (CDRF), China's working-age population (aged 15–64) will increase at an average annual rate of 0.23% from 2011 to 2016, reaching the peak of 998 million in 2016, and then decrease, reaching 745 million in 2050, the level it was at the end of the 1980s (Fig. 5.9) (CDRF 2012).

Second, the number people entering the labour force will decrease sharply. Due to the rapid decline and low fertility rate, the number of newcomers to the labour force has substantially decreased in China. The population aged 18–22 was 124 million in 2008, falling to 108 million in 2011, and will decrease by 7 million annually in the coming decade. In 2050, there will only be half the current number of newcomers to the labour force (Fig. 5.10) (CDRF 2012). The change in the number of newcomers to the labour force, the most active part of a country's human resources, has an important influence on the labour supply and demand as well as the country's economic development.

Third, the labour force is ageing rapidly. Comparing the youngest population group aged under 30 and the oldest group aged 51–64, there is a clear ageing trend. The proportion of the youngest group is likely to keep decreasing over the next 40 years, while that of the oldest group will increase. In 2020, the oldest group will



**Fig. 5.10** Newcomers to the labour force in China (2001–2050). *Source:* China Development Research Foundation (CDRF) (2012), 2011/12 China Development Report: Demographic Changes and Policy Adjustment, China Development Press



**Fig. 5.11** Labour force ageing in China (2011–2030). *Source:* China Development Research Foundation (CDRF) (2012), 2011/12 China Development Report: Demographic Changes and Policy Adjustment, China Development Press

have a larger share than the youngest group. In 2050, the proportion of the youngest group in the total working-age population will be less than one fourth, while that of the oldest group will be near 40% (Fig. 5.11) (CDRF 2012).

For a long time, policy makers' focus has been on the size of the labour force, while the sharp decrease in the number of newcomers to the labour force and fast ageing have been given less attention than they deserve. Such new trends in the labour market herald new challenges for labour market policy and system security.

### 5.3 China's Preparations for Its Population Ageing

Along with population ageing is the huge demand for the development of the elderly care industry or what is called the “silver industry and white economy”.<sup>6</sup> According to the 2005 Survey on Health Influencing Factors of the National Elderly Population, nearly 18% of the elderly need external assistance in their daily life and most of these in need do not have an independent source of income to support themselves. Sixty-four percent of them depend completely on external services for care (Yun et al. 2010). If the living capabilities of the elderly population continued to improve at an annual rate of 1% as they did between 1992 and 2002 (Gu and Zeng 2006), it was estimated that the number of those requiring daily care would reach 15–20 million in 2005. Due to the differences between urban and rural areas, in terms of the disability adjusted life year,<sup>7</sup> the medical care level and the social welfare level, the urban elderly population needs to pay a considerably more than their rural counterparts for the daily care during the rest of their lives. Based on transition probability calculations of care costs, mortality and self-care capability of the elderly population at different ages in 2005, an elderly person living in an urban area needs to pay a direct expense of CNY 9200 every year for daily care for the rest of his life, while for an elderly person living in the countryside, the figure is CNY 4200 (Cheng et al. 2010). The demands of the Chinese elderly population for social care, medical care, services and daily necessities call for a more rapid development of the silver industry and the implementation of relevant policies.

#### 5.3.1 *The Current Status of the Silver and White Industries*

China has enacted a series of policies to strengthen community construction, provide better services to the elderly and improve their living environment. Such efforts have also been applied to rural areas. During the 11th Five-Year Plan period (2006–2010), the number of community service centres nationwide reached 175,000 and that of

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<sup>6</sup>The term “silver economy” has been frequently used by European scholars in recent years. At the “Silver Economy in Europe” Conference in Bonn, Germany in February 2005, a declaration was drafted which describes the silver economy “...as an opportunity for quality of life, economic growth and competitiveness in Europe” (Silver Economy in Europe 2005: web document). The declaration argues that “an appropriate innovative drive [in this sector] results in growth and new jobs, and in a global context increases Europe’s competitiveness and that of the companies operating [t]here” (Silver Economy in Europe 2005: web document). In this research, silver industry (or silver economy) is defined as the industry/sector focusing on producing/providing the aged population oriented products/services. “White economy” refers to those products, services and activities related to healthcare and care including the dependent, disabled and elderly.

<sup>7</sup>Disability adjusted life year (DALY) refers to the total number of years lost due to ill-health, disability or early death. It includes the two parts of years of life lost (YLL) due to early death and years lived with disability (YLD) caused by diseases.

urban convenience outlets reached 693,000. Nearly half of the urban communities and 80% of towns and villages launched aged service facilities. There was a significant increase in the number of beds for the elderly in nursing homes. There were 38,060 nursing homes nationwide, providing a total of 2.662 million beds for 2.109 million elderly people. The number of beds and the number of elderly people served had risen by 62% and 71%, respectively over the end of the Tenth Five-Year Plan period. Of all the nursing homes, 4141 were formally registered and privately operated, accounting for 10.6% of the national total. Such private nursing homes provided 412,000 beds, or 15% of the national total for 238,000 elderly people, or 11% of all that were cared in nursing homes. The bed utilisation rate of such private nursing homes was 57.8% (China National Committee on Ageing 2011). China has issued a series of policies to promote the development of national nursing homes, including the “Recommendations on Accelerating Socialisation of Social Welfare”, the “Recommendations on Accelerating the Development of Old-Age Services”, the “Assessment Standards on State-level Nursing Homes”, and the “Code of Conduct for Social Welfare Institutions”. The professional and standard development of elderly care services has been further advanced by the efforts of full-time social workers and volunteers.

In spite of the above efforts, the rapid growth of the ageing population, the seriousness of senility, the lack of effective elderly care, and the underdeveloped material conditions pose many challenges to the general cause of providing for the elderly (Lu 2011). Those challenges can be summarised as:

- First, the large gap between different regions and between rural and urban areas in terms of social and economic development leads to apparently imbalanced development of the old-age service system. Some basic social security programmes have quite a narrow coverage in rural and less-developed areas.
- Second, the increase of “empty nests” grows more serious for the elderly population and the traditional family support mode faces challenges. The present mode of elderly care, medical care and services for the elderly falls short in terms of economic support, daily care and mental solace.
- Third, the continuing increase of life expectancy brings up the number of the oldest old (80+), who are more likely to develop disabilities. This brings new conditions and issues to the content and development pattern of the old-age service system, with the high expenditure on daily care being a very prominent issue.
- The accelerated development of the silver and white industries not only requires stronger governmental and social support but also needs to draw support from the market. The creation of a second demographic dividend period once the first one comes to an end calls for rapid development of the silver and white industries and therefore, provides tremendous business opportunities.

### ***5.3.2 Prospects of the Silver and White Industries***

Population ageing combined with an increasing number of “empty nest” families caused by a low birth rate creates a tremendous market demand for elderly care services. The demand has multiple layers and covers many different aspects. Apparently, the traditional cooking and cleaning services cannot fully meet the needs of the elderly, who now expect mental solace, emotional exchanges, interactive entertainment as well as financial and medical consultation. The comparatively lower self-care capability and worse health conditions of the oldest old provide another huge business opportunity for the healthcare industry.

Many studies show that besides such common health issues as cognitive disorders and organ diseases during the ageing process, elderly people also suffer from a much higher 2-week prevalence rate and chronic disease prevalence rate than people of other age groups. This will first lead to a substantial increase in their consumption of health products and drugs, including anticancer drugs, cardiovascular drugs, as well as anti-obesity drugs, which are the three most needed types of drugs for the elderly. Secondly, the serious shortage of nursing personnel at present makes it difficult to fulfill the care needs of the elderly. Thirdly, medical equipment and devices that can improve the self-care capability and quality of life of the elderly will become increasingly popular, such as those that can monitor the physical condition of the elderly or make emergency calls.

The comparatively high mortality risks of the elderly also provide development opportunities for matchmaking, marriage counseling, legal advice and other related industries. The well-educated, high-income elderly group calls for the development of elderly entertainment and financial and insurance consulting industries. During recent years, China’s elderly tourist industry has seen promising growth but still cannot fully meet the needs of the elderly for leisure tours. There are very few entertainment centres or clubs specially designed for the elderly, which also holds market prospects.

Among the many industries related to population ageing, the daily necessities (products for daily use) industry sees a steady increase in its market capacity. Apart from the traditional necessities, such as clothes, crutches, reading glasses, tooth sockets, hearing aids, urinals and diapers, cleverly designed products are also much favoured on the market, which can significantly improve the self-care capability and quality of life of the elderly. Such products include cell phones with a big screen and a big keyboard which are suitable for the elderly population with poor eyesight, shaking hands and a lower educational attainment, or crutches that are attached to a stool and easy to fold, making it easy for the elderly to sit down and stand up. Even in the traditional old-age service industry, special shopping malls and e-commerce also represent significant business opportunities.

Because of the many one-child and childless families, the number of “empty nest” families and elderly people living alone has increased year by year. This is further reflected by the more urgent demand for self-care products for the elderly.

According to data provided by China National Committee on Ageing, while the market of the elderly had a CNY 10 trillion demand in 2010, less than 10% was met.

Statistics of the 2005 Health Survey of the Elderly Population of the Four Municipalities Directly under the Central Government show that there have been significant changes in the elderly population's choice of support mode. Although 58.3% of the urban elderly population still prefers to live with their children, quite a number of the elderly choose to live alone, accounting for 39% (Shanghai Securities News 2011) of the total. With an increasing number of elderly people choosing not to live with their children, the huge market demand for high-grade residences has been created thanks to the significant increase in the income and savings of the elderly population and the lack of elderly housing projects on the market.

### ***5.3.3 Policy Requirement for the Development of the Silver and White Industries***

Misconceptions have always existed in the approach of governments, enterprises and families to the old-age service system. Due to the difficulty in grasping the tendency and long-term influences of the ageing process in the first place, relevant government departments started to pay attention to the issue at a rather late stage and many local governments even considered it a burden or a marginal issue instead of an industry with huge potential. Enterprises habitually associate the old-age service business with a long cycle of investment return, low profit and high risk, see no business opportunities, and are reluctant in developing products and exploring market potentials. Traditionally, a large proportion of the elderly population tends to refrain from adding burden to their children, which is typically reflected in their reluctance to seek medical treatment when ill. The lack of consumption desires has greatly reduced the market potential. Therefore, the government needs to properly handle the relation between the profit-making nature and the public nature of the elderly care industry and create greater market incentives through institutional measures (Lu et al. 2008).

Besides fragmented policies for the elderly, China lacks a policy system that provides support for investment and consumption in this area from the many aspects of venues, loans, taxation and subsidies and encourages the inflow of private capital. The comparatively long cycle in obtaining returns on investment and the unsatisfactory returns at the early and medium stages add to the difficulty in developing the industry, where the reluctance of manufacturers to produce and traders to sell is coupled by the inability of the consumers to buy such products. Take the reluctance of real estate developers to develop housing projects for the elderly, for example. There are no specific policies regarding such crucial issues as whether the land used is operational or not or whether land should be transferred through negotiation or bidding. Besides, some systems related to the elderly population still need improvement, such as the elderly care system, the medical

care system and the long-term care insurance system, etc. which makes it difficult for the elderly to consume without any worries for the future. This poses another challenge to the development of the old-age service industry in China.

Another hampering factor is in the lack of uniform industry standards, as well as product and service standards, and an industry access system in the market for the elderly. Constraints are apparent in two aspects. First, the inability to effectively protect their rights and meet their varied consumption demands hurt the elderly population's enthusiasm to consume. Second, although the ageing process has created considerable business opportunities, the lack of industrial standards and clear policy directions can easily lead to high business risks and market disorder and has therefore undermined the confidence of private companies to do business in this field.

To address the above-mentioned problems, China needs to accelerate strategic planning and promote the sound and rapid development of the silver industry systematically. Pillar sectors should be identified based on the objective needs of the elderly population and the maturity of the market. Priority should be given to the development of pillar sectors, through which the industry may be advanced as a whole. Relevant public policies should be improved to further regulate market practices and enhance self-discipline of the industry so that a shared prosperity may be achieved for all sections of the industry. The government should dutifully fulfill its responsibilities in providing basic public services by establishing a stable support system for the elderly, such as:

- managing the difficulties in caring for the elderly in urban areas who have no ability to work, no source of income, and no legal support; and those with a disability and no family
- greatly increasing the number of nursing homes, beds and caregivers and ultimately developing an elderly care and service system that is supported by enhanced investment and services
- focus on strengthening family support, expanding community support, nursing home support and promoting the development of the industry of old-age service.

## 5.4 The Beijing Challenge

Faced with the increasing ageing of the population, it is urgent for the Chinese government to take prompt actions. However, before that, it is necessary to grasp the current needs of the elderly and identify what particular issues need to be managed. This section, based on the survey results of Beijing<sup>8</sup> in 2012, aims at providing an analysis of the current and potential needs of the aged population in China.

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<sup>8</sup>This survey was conducted during the period from August to November 2012. Three types of respondents were interviewed: residents aged 50 or over, leaders of enterprises engaging in silver and white industries, and officials working in senior-related sectors.



### 5.4.1 Profile of Beijing

Beijing, the capital of China, is located in the north part of the country. It consists of 14 districts and 2 counties, with an area of 16,411 km<sup>2</sup>. In 2011, Beijing's GDP per capita was CNY 81,658 (USD 12,643), belonging to the economically advanced areas in China.<sup>9</sup>

Given the existence of the household registration system, Beijing's residents are divided into two categories: permanent registered residents and non-permanent registered residents. Non-permanent registered residents are also called migrants or the "floating population" and refer to those who have been living in Beijing for more than 6 months but who do not have a Beijing local household registration. By the end of 2011, Beijing's total population was 20.2 million. Among them, the permanent registered population amounted to 12.8 million.

In 1990, people aged 60 years and over in Beijing reached 1.1 million, accounting for 10% of Beijing's total population, indicating Beijing's entrance into an ageing society. The past two decades have witnessed rapid population ageing in Beijing. The population aged 60 or over reached 1.7 million in 2000 and 2.5 million in 2010, and it is expected to amount to 4 million in 2020 and 5 million in 2030. Accordingly, the proportion of the elderly in the total population has also increased rapidly. In 2010, the proportion of the population aged 60 or over among Beijing's total population was 12.5%, and this proportion is expected to reach 20% in 2020 and 30% in 2030 (Beijing Civil Affairs Bureau 2012).

From 2000 to 2010, although the number of the elderly in Beijing increased by more than 50%, its proportion remained at 12.5% due to a large number of migrants that slowed the oncoming speed of population ageing in Beijing. By the end of 2011, migrants in Beijing had amounted to more than 7.4 million, most of which were young workers. As a result, compared to the total population, population ageing in Beijing's permanent registered population is more serious. By the end of 2011, persons aged 60 or over amounted to 2.5 million, accounting for 19.4% of the total permanent registered population. Among them, persons aged 65 or over amounted to 1.8 million, accounting for 13.9% of the total permanent registered population; persons aged 80 or over amounted to 386,000, accounting for 3.0% of the total permanent registered population (Beijing Civil Affairs Bureau 2012).

Table 5.2 outlines the current composition of the permanent registered population aged 60 or over in Beijing. By the end of 2011, Beijing's age dependency ratio (for the permanent registered population aged 60 or over) was 27.6%.

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<sup>9</sup>In 2011, China's per capita GDP was CNY 35,083 (USD 5432).

**Table 5.2** Composition of the permanent registered population aged 60 or over in Beijing

		Number (thousands)	Proportion (%)
Gender	Male	1190	48.0
	Female	1289	52.0
Age	60–69	1187	47.9
	70–79	906	36.6
	80–89	360	14.5
	90 or over	26	1.0

Source: Beijing Municipal Bureau of Statistics (2012) 2012 Beijing statistical yearbook

### 5.4.2 *Beijing's Measures for Addressing Population Ageing*

In 1984, Beijing established the Committee for Aged People. In 1996, the Leadership Group for Aged People, consisting of 16 member units, was established. The Aged People Association is its administrative part. In 2000, the Leadership Group for Aged People changed its name to the Committee of Service for the Aged People. Its membership increased to 34 units and in 2011 it increased again, to 44. The districts and counties belonging to Beijing also established a committee accordingly.

In recent years, faced with the increasing number of aged people, the Beijing government established the “9064” mode to provide support to its aged population. Under this mode, 90% of the aged people are expected to get support from their own family, 6% are expected to get support from community, and the remaining 4% are expected to live in nursing homes and seek support from the staff there. In addition, Beijing has taken the following measures to deal with its population ageing.

#### 5.4.2.1 **Expand Social Security to All Urban and Rural Residents**

First, the old-age security system for all urban and rural residents was established. This system consists of a basic retirement pension for employees' old-age pension for urban and rural residents, and a preference pension for those without a retirement pension. The retirement pension for 2,037,000 company workers has increased from CNY 1086 in 2006 to CNY 2510 in 2012.

Second, the urban and rural healthcare security system supported by the basic healthcare insurance for urban workers, healthcare insurance for urban residents and new rural co-operative healthcare system was created, which benefits 2,328,000 retired workers, 191,000 aged people without healthcare coverage and 645,000 rural aged people. Per capita life expectancy improved from 80.09 years old in 2005 to 80.81 in 2010.

Third, an overall urban and rural social assistance system for aged people was established. In 2012, 38,000 aged people were provided with a subsistence allowance. The rewarding and supporting system was established for rural parents over

60 who had followed the one-child policy. In addition, impoverished urban and rural aged people are given priority for low-rent housing.

Fourth, the initial part of a social welfare system for aged people was established, including a system of home-based care for the aged or disabled, a high-age subsidy and healthcare assistance for people 95 years old or above.

#### **5.4.2.2 Push Forward Home-Based Care for Aged People**

The Beijing government strives to develop a home-based, community-supportive, policy guarantee, and socialised operation service model for aged people. Since 2010, the government has been granting all aged people above 80 years old a CNY 100 coupon every month to be used in exchange for six kinds of service, including: daily care, housekeeping, recovery care, mental support, education and some other related services. From 2010 to 2011, the government developed 15,000 companies offering such services and founded 4585 places to provide old-age oriented food to aged people. In addition, the government established 5305 nursing homes, which provide 30,000 beds. All of these measures help to alleviate the difficulties that aged people are experiencing in dealing with their daily lives. Furthermore, to encourage the virtue of respecting the elderly, the government started to elect and appraise 10,000 persons and 1000 companies that excelled in doing service for the aged in 2010. From 2011, the healthcare assistance for the aged above 100 was extended to people 95 or above. The number of people employed to work for home-based care of the aged reached 4400, which further expands the grass-roots human resources supporting the old-age security. Meanwhile, the government equipped all the urban and rural districts with barrier-free service cars and offered 40,000 aged families with barrier-free facilities. In addition, the government tried to give spiritual care for the aged. There are 35 designated companies contracted by the government to offer psychological consultancy. The hotline, 96,156, is set up to offer free psychological consultancy for aged people. A large number (200,000) of electronic machines called "helper" have been delivered to the aged.

#### **5.4.2.3 Implement a Preferential Policy for the Elderly**

According to the Measures of Preferential Treatment for the Beijing Aged People, aged people will enjoy 11 types of preferential treatment, including in daily life, transport, entertainment, medical and healthcare, protection of their rights and many more. The related government department has granted preferential cards for 1,750,000 aged people above 65. These cards allow aged people to enjoy free inner-city transport, free or reduced price entrance and service to over 500 parks, scenic spots, museums, public gyms and cultural centers. There are 26,000 aged people above 90 enjoying the high-age subsidy. Social institutes related to legal policy will offer free or favourable prices for legal advice or assistance to improve the protection of the aged people's rights. The government organised many community

**Table 5.3** Beijing's index of services for aged people (2011–2015)

	Index	2010	2015	
Social security system	Participation rate of urban worker's pension (%)	96	98	
	Participation rate of urban worker's medical insurance (%)	95.7	98	
	Participation rate of urban and rural residents' pension (%)	92	95	
	Participation rate of urban and rural residents' medical insurance (%)	90	95	
	Subsidy for older-aged (CNY/month)	80–89	...	100
		90–99	100	200
		100 and above	200	300
	Subsidy for disabled aged (CNY/month)	...	200	
Life expectancy (year)	80.8	81.8		
Services for aged people	Number of nursing beds for the elderly (tens of thousands)	7.2	12	
	Number of nursing beds per 100 aged people	2.8	3.8	
	Number of beds for mid and long-term nursing	...	5000	
	Rate of nursing beds (%)	...	50	
	Number of beds for daytime nursing per 100 aged people	1	2	
	Number of attendants per 10,000 aged people	15	50	
	Number of home-based attendants for aged or disabled people	2000	10,000	
	Number of psychologists per 10,000 aged people	15	20	
	Coverage of the aged association in community or village (%)	90	98	
Rate of aged people attending schools/colleges (%)	13	18		
Workers	Number of affiliated workers in the public sector per 10,000 aged people	10	30	

Note: ... data not available

Source: Beijing Civil Affairs Bureau (2012), *Outlook of Beijing's Population Ageing*

cultural and sports activities to enrich aged people's spiritual life and encourage them to actively participate in social activities.

#### 5.4.2.4 Establish Specialised Organisations to Provide Services for Aged People

The Beijing government has sped up the construction of services for old-aged people in the past decade (Table 5.3). As a result, the number of beds for old-aged people has increased, from 30,000 in 2005 to 82,000 in 2011, and the number of beds per 100 aged people has increased from 1.53 to 3.3. Between 2006 and 2010, the number of beds for nursing aged people increased by 41,000, which is

nearly 1.4 times the total number from 1949 to 2005. They increased by 15,000 in 2009 and 2010. At the same time, the government actively delivered a supporting policy subsidising CNY 8000 to CNY 16,000 for each bed during the construction period and CNY 200 to CNY 300 during the operation period per aged person. Through these efforts, the Beijing government is trying to improve the standards of the organisations providing old-age services (Beijing Civil Affairs Bureau 2012).

### ***5.4.3 Current Economic Conditions of Aged People in Beijing***

As the country's capital, Beijing's proportion of the population working in the public sector is comparatively high. At present, people working in the public sector are usually entitled to a better social security system than those working in the private sector. However, an analysis of the current economic conditions shows that even in Beijing the elderly are usually in an economically deprived condition. The yearly income of the elderly in Beijing's urban area and rural area was 59.8% of the average income for urban workers and 95.6% of per capita net income of rural residents respectively in 2011. Further analysis reveals the existence of a large income gap between the rural elderly and the urban elderly. According to one survey carried out in 2011, the income of rural residents was only 42.0% that of the urban residents (Feng et al. 2012).

The current urban-rural income gap can be partly explained by the difference in the elderly's income composition. Usually, after retreating from the job market, pension constitutes the principal source of income of the elderly. Currently, the proportion of pension among the elderly's total income in Beijing's urban and rural areas is 81.9% and 37.3% respectively. There are dramatic differences in the coverage ratio and supporting level of pension in rural and urban areas. In Beijing's rural area, in addition to pension, working income and government subsidies constitute the other two main sources of income. The proportion of the former is 30.8%, and the proportion of the latter is 25.4% (Feng et al. 2012).

In spite of the big income gap, there is no obvious difference in personal expenditures between the rural elderly and the urban elderly. Annual expenditure of the urban elderly in 2011 was CNY 7099, that of the rural elderly was CNY 7611. In addition, analysis also shows great similarity in the composition of expenditure. For both the urban elderly and the rural elderly, medical expenses, clothing and communication expenses constitute the three most important items in their expenditure. However, the proportions of these three items are different for the rural elderly and the urban elderly. For the urban elderly, expenses used in the above three items are 61.0%, 15.1% and 11.3% respectively, whilst they are 81.5%, 6.6% and 6.1% respectively for the rural elderly (Feng et al. 2012).

In addition to income, wealth constitutes another important part of the elderly's economic conditions. The survey shows that 80.2% of the elderly in Beijing have

their own houses/apartments. On average, every aged person has 1.16 apartments. In the urban area, the average area of a typical apartment for the elderly is 79.4 m<sup>2</sup>, while in rural areas the average area of a typical house is 137.4 m<sup>2</sup>. Given the current high cost of housing in Beijing, owning a typical apartment in an urban area is the equivalent of USD 300,000–400,000. Thus, from the perspective of wealth, the economic conditions of the elderly in Beijing cannot be regarded as bad. The problem that remains is how to obtain financial support from their real estate.

#### ***5.4.4 Current and Potential Usage of Old-Age Products and Services in Beijing***

In 2012, the most often mentioned goods or services needed among the aged people in Beijing included the following seven aspects: health checks, nutritional supplements, nursing products, education/training, travelling, financial products and nursing services.

##### **5.4.4.1 Health Checks**

As age increases, the elderly are more likely to experience physical problems. Therefore, health checks are of great importance in an elderly person's life. In recent years, more and more aged people in China have begun to pay attention to their physical condition. As a result, the need for health checks among the elderly, especially in urban areas, is continuously growing. In 2011, 60.3% of the elderly in Beijing received a health check. This proportion is expected to increase to 84.6% in the coming years. On the other hand, those that had not received a check-up in the past 5 years still accounted for 20.4% of the aged population in Beijing (Feng et al. 2012). The big challenge in China is how to ensure that every aged person receives a health check-up.

The public hospital is the primary choice for the elderly in contemporary China to receive a health check-up. Among those having received a health check, 76.9% had it done at the public hospital in Beijing. In contrast, those who selected a specialised private health-check institution only accounted for 13.6%. Recently, private specialised health check-up centres have been developing very quickly. However, most of these centres have focused on the working-age population. Aged people oriented centres are quite few. In addition, the costs of these private specialised centres are much higher than those of public hospitals. Given the fact that most aged people in China have a much lower income, public hospitals are expected to play a more important role in providing health check-ups to the elderly. Differences exist between rural and urban areas; in Beijing's urban area, up to half of the elderly receive this service through the help of their former employer, whilst in rural areas, 80% of the elderly get this service through the help of the village.

Health-check expenditure will experience rapid growth in the coming years. In 2011, the average cost for a health check in Beijing was CNY 948, among which personal cost is CNY 453. When asked about their budget for health checks in the future, the average response given by the elderly was CNY 641, a 41.7% increase from current expenditure. The above expenditure increase, combined with the rapid increase of the rate of health checks, is expected to bring dramatic growth in the elderly's health-check market in the future. It is expected that in the year 2020, Beijing's health-check market for the population aged 50 or over will grow to CNY 9.1 billion (Feng et al. 2012).

An analysis concerning the characteristics of the elderly having received a health check shows differences between different groups among the elderly. Generally speaking, the participation rate of health checks of the urban elderly is much higher than that of the rural elderly; those with higher educational attainment, and those who have a higher income are more likely to receive a health check than those with a lower educational attainment and those who are economically less well off.

#### 5.4.4.2 Nutritional Supplements

In 2012, the consumption of nutritional supplements among Beijing's aged people was at a comparatively low level. At present, those who are using nutritional supplements only account for 19.9% of the total aged population in Beijing. In other areas of China, this proportion is expected to be much lower yet. This low proportion results from dissatisfaction with the effects of the current nutritional supplement products on the market. When asked about the effects of nutritional supplements, those who answer "useful", "useless" and "adverse" account for 17.3%, 45.6% and 6.4% respectively in Beijing. Among those who use nutritional supplements, the average yearly expenditure is CNY 4323 (about USD 700) (Feng et al. 2012), a comparatively high expenditure in terms of the annual income of the elderly. This seemingly contradictory result indicates the coexistence of a strong need for nutritional supplements among the elderly and the high dissatisfaction with the current products provided on the market. Another challenge for China is how to provide satisfactory nutritional supplements to the elderly in the coming years.

Resulting from the comparatively negative evaluation on the quality of current products, the elderly demand for nutritional supplements will experience a slow-down in the coming years. As shown in Beijing's 2012 survey, those who plan to buy nutritional supplements will fall to 17.9% of the total respondents, a 2% decrease from the current level. Furthermore, the average expenditure on nutritional supplements will also experience a downturn in the coming years. As the survey shows, on average, the expenditure per aged person on nutritional supplements will decrease from the current CNY 4323 to CNY 4127 in the future.

In Beijing, 55.2% of the aged population regarded "effect" as the most important aspect with regard to choosing nutritional supplements. In contrast, those who selected "price" as the most important factor only accounted for 4.6% of the aged population. This result shows the possible way to establishing a well-functioning

mechanism for providing nutritional supplements to the elderly: it is effect/quality, not the price that decides the possibility of a product's success in the nutritional supplement sector for the elderly in contemporary China.

#### 5.4.4.3 Nursing Products

In the past decade, nursing products (personal care products) have been widely used in China. At present, 93.8% of the aged people in Beijing use such products. A further analysis concerning the similarities and differences between different groups reveals disparities among the elderly. As far as the personal yearly expenditure is concerned, the maximum amount in 2011 was more than CNY 60,000, whilst the minimum amount was only CNY 1. On average, the elderly are spending CNY 2545 on nursing products per year.

The elderly's demand for nursing products will continue its growth in the future. This growth results from two contributing factors: the increase of market share and the increase of individual personal yearly expenditure. Currently, those who plan to purchase nursing products in the future account for 96.5% of the total respondents, nearly a 3% increase from current levels. Meanwhile, the anticipated individual yearly expenditure on nursing products will see a rapid increase: to CNY 9394 in the coming years, which represents a 269% increase from the current expenditure level. Both of the above increases will lead to the rapid development in the usage of nursing products in the future.

A further analysis regarding the characteristics of the population using nursing products shows that great disparities exist between different groups of the elderly (Table 5.4). The age group below 60 years old will see the fastest growth in the future, as will the group of professionals/technicians. By income, the lowest group, with a yearly income of less than CNY 10,800 and the highest group with a yearly income of above CNY 38,400 will see the fastest growth in the future.

#### 5.4.4.4 Travelling

After retirement from the job market, more and more elderly are realising the importance of finding opportunities to engage in social activities. Among them, travelling has become one important way for the elderly to seek emotional support. In 2011, 40.2% of the elderly travelled. This share is expected to increase to 58.8% in the coming years (Feng et al. 2012). Currently, there are three categories in the elderly's travelling: short-distance travelling to neighbouring areas, long-distance domestic travelling and overseas travelling. Among them, short-distance travelling is the most popular among the elderly.

As far as the particular travelling style is concerned, most of the elderly travelled with friends/family members or made the arrangements by themselves. The proportion of this style accounts for 45.4% of the travellers. In addition, 21.1% of the elderly travelled with the help of their former employer, and 11.9% of the elderly travelled



**Table 5.4** Consumption of nursing products among the elderly in Beijing

		Current consumption		Future consumption		% change
		No.	%	No.	%	
Residence	Urban area	84	23.10	77	21.20	-1.90
	Rural area	13	10.70	10	8.20	-2.50
	Total	97	20.00	87	17.90	-2.10
Age	Less than 60	28	18.90	28	18.90	0.00
	60-69	29	16.30	22	12.40	-3.90
	70-79	28	23.70	26	22.00	-1.70
	80 or over	11	28.90	9	23.70	-5.30
	Total	96	19.90	85	17.60	-2.30
Gender	Male	31	14.70	29	13.70	-0.95
	Female	66	24.40	58	21.50	-2.96
	Total	97	20.20	87	18.10	-2.08
Educational attainment	Primary school	14	12.40	15	13.30	0.88
	Middle school	23	16.20	19	13.40	-2.82
	High school	32	21.90	28	19.20	-2.74
	College or above	28	32.60	25	29.10	-3.49
	Total	97	19.90	87	17.90	-2.05
Occupation	Government official	47	26.40	42	23.60	-2.81
	Business leaders	25	21.19	26	22.03	0.85
	Professional/technicians	8	16.67	4	8.33	-8.33
	Clerks	5	6.49	5	6.49	0.00
	Workers in manufacturing/ transport sector	10	21.74	8	17.39	-4.35
	Other	2	11.76	1	5.88	-5.88
	Total	97	20.04%	86	17.77	-2.27
Personal yearly income	10,800 CNY or under	7	7.14	5	5.10	-2.04
	10,801-24,000 CNY	14	12.84	15	13.76	0.92
	24,001-30,000 CNY	21	21.43	21	21.43	0.00
	30,001-38,400 CNY	24	28.92	21	25.30	-3.61
	38,400 CNY or over	30	31.25	25	26.04	-5.21
	Total	96	19.83	87	17.98	-1.86

Source: Wenmeng Feng et al. (2012), 2012 Beijing Silver Industry Research Report, CDRF

with the help of their community/village. In contrast, those who travelled with the help of a specialised travel agency only accounted for 18.1% (Feng et al. 2012).

As for the effect of travelling, 58.7% of the elderly regard travelling as a way to seek leisure/happiness and 25.5% as a way to obtain new knowledge. In addition, those who regard travelling as a way to improve relationships with family members or improve their own physical conditions account for 6.1% and 6.6% respectively (Feng et al. 2012).

In addition to the increase of market share, the elderly's individual expenditure on travelling is also expected to see a rapid increase in the coming years. At present,

**Table 5.5** Travelling rate among the elderly in Beijing

		Current consumption		Future consumption		% change
		No.	%	No.	%	
Residence	Urban area	155	42.6	230	63.2	20.6
	Rural area	41	33.6	56	45.9	12.3
	Total	196	40.3	286	58.8	18.5
Age	Less than 60	72	48.6	115	77.7	29.1
	60–69	69	38.8	102	57.3	18.5
	70–79	41	34.7	56	47.5	12.7
	80 or over	12	31.6	11	28.9	–2.6
	Total	194	40.2	284	58.9	18.7
Gender	Male	80	37.9	123	58.3	20.4
	Female	116	43.0	163	60.4	17.4
	Total	196	40.7	286	59.5	18.7
Educational attainment	Primary school	27	23.9	38	33.6	9.7
	Middle school	54	38.0	81	57.0	19.0
	High school	64	43.8	104	71.2	27.4
	College or above	51	59.3	64	74.4	15.1
	Total	196	40.2	287	58.9	18.7
Occupation	Government official	80	44.9	114	64.0	19.1
	Business leader	53	44.9	80	67.8	22.9
	Professional/technicians	12	25.0	30	62.5	37.5
	Clerks	24	31.2	28	36.4	5.2
	Workers in manufacturing/ transport sector	19	41.3	24	52.2	10.9
	Other	7	41.2	9	52.9	11.8
	Total	195	40.3	285	58.9	18.6
Personal yearly income	10,800 CNY or under	30	30.6	46	46.9	16.3
	10,801–24,000 CNY	39	35.8	61	56.0	20.2
	24,001–30,000 CNY	33	33.7	61	62.2	28.6
	30,001–38,400 CNY	39	47.0	50	60.2	13.3
	38,400 CNY or over	53	55.2	67	69.8	14.6
	Total	194	40.1	285	58.9	18.8

Source: Wenmeng Feng et al. (2012), 2012 Beijing Silver Industry Research Report, CDRF

the elderly's yearly individual expenditure on travelling is CNY 5708 in Beijing. This number is expected to reach CNY 7170 in the coming years, a 25.6% increase from the current level (Feng et al. 2012).

An analysis concerning the characteristics of elderly travellers reveals the differences between different groups in growth potential (Table 5.5). In terms of residence, the urban elderly is higher. In terms of age, the younger group is higher. In terms of educational attainment, the high school group is increasing the fastest. In terms of occupation, the group of professional/technician is the fastest. And in

terms of income, the middle class with personal income from CNY 24,001 to 30,000 is the fastest.

In spite of the rapidly increasing desire to travel among the elderly, the supply of aged people oriented travelling courses is far from enough. At present, most of the travelling courses are based on the assumption that the participants are healthy and young. Special consideration to the comparatively poor mobility and food preferences of aged participants is usually neglected. In the coming years, the designing of aged people oriented travelling courses is urgently needed.

#### **5.4.4.5 Education/Training**

Given the social context of today's elderly's childhood period, the educational attainments of the current elderly are comparatively low. Even in Beijing, the educational attainments of the current elderly are as follows: primary school 23.2%, middle school 29.1%, high school 30.0%, college or above 17.7%. For them, receiving education/training after retirement makes their life more comfortable and more colourful. Currently, 33.1% of the elderly in Beijing participate in various types of training/education after retirement. Most of these training courses are offered free of charge by communities or villages. Among those who have paid for training, the average expenditure is CNY 104 (Feng et al. 2012).

In contrast with the current low participation rate and expenditures, the training/education sector for the elderly will see extremely rapid growth in the coming years. On one hand, the market share of those who participate training is expected to reach 62.4% in the coming years; on the other hand, the personal yearly expenditure is expected to increase to CNY 854, a 724.4% increase from the current level. Health-keeping related knowledge and habit-forming activities are the most interested courses among the elderly.

In spite of the bright future of the training sector for the elderly, the current supply is far from sufficient. Although the number of training schools/colleges for the elderly in China had increased to 48,116 by the end of 2011, a large amount of aged people still cannot find a suitable place to receive training/education after their retirement. In addition, more and more aged people have begun to pay more attention to the quality of training. In the coming years, establishing a well-functioning training system for the elderly is also becoming an urgent issue.

Further analysis concerning the characteristics of the training participants shows the differences between different groups in the growth potential of training. It is higher in rural areas and among younger groups. It is increasing the fastest among government officials and high school graduates.

#### **5.4.4.6 Financial Products**

For most aged people in China, financial products are a newly emerging product, most of which are too complicated for them. Thus, the proportion of those who

possess financial products is comparatively low. As shown in the survey, currently 22.8% of the elderly possess financial products. The individual possession of financial products on average is CNY 70,832. As far as the particular financial products are concerned, securities, funds and commercial insurance constitute the bulk.

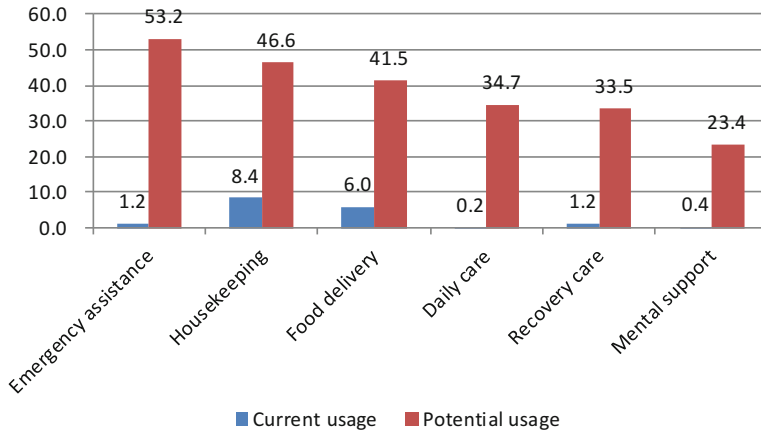
Currently, most of the elderly obtained financial product related information from friends/family members, TV commercial advertising, and the propaganda of financial institutions, the proportions from these sources account for 7.8%, 6.0%, 5.3% and 4.5% respectively (Feng et al. 2012). This composition shows that most of the elderly do not have enough information concerning financial products. When asked about the difficulties in purchasing financial products, most of the elderly pointed out that the complexity of the current products has impeded their purchase. In addition, the shortage of suitable products in the financial market constitutes another barrier for the elderly's participation in the financial market.

Given the comparatively poor overall performance of the financial market in recent years, most of the elderly have the intention to withdraw or lessen the purchase of financial products in the future. Those who plan to purchase financial products in the future will fall from the current 22.8% to 18.7%, a 4.1% decrease from the current level (Feng et al. 2012). However, not every product will see a decline in this market. In spite of the obvious downturn of holding securities and stocks, foreign currencies and valuable metals such as gold are attracting more attention from the elderly. In addition, the more fundamental reason for the downturn is the shortage of supplying suitable products. The elderly are less risk tolerant than the younger generation. Thus, most of those who purchase financial products seek low-risk products.

A further analysis of the characteristics of the elderly engaging in the financial market shows the differences across groups. The group aged 59 years or under shows the fastest downturn, whilst the group aged 70–79 shows an increasing will to purchase financial products. In educational attainment, the group of middle school shows the fastest downturn. By occupation, the group of professional/technician showed the fastest downturn. In income, the middle class with a yearly income of CNY 24,001–30,000 shows the fastest downturn. In coming years, it will be necessary to design suitable financial products based on the above characteristics.

#### **5.4.4.7 Caring Services**

In 2012, 12.9% of the aged population in Beijing was using caring services. Those services include: housekeeping, food delivery, daily care, recovery care, emergency assistance and mental support. Figure 5.12 presents the current and future usage of these six kinds of services. Among the current usage, housekeeping is the most popular, at 8.4%. In the coming years, the need for caring services will rapidly increase and its proportion is expected to amount to 65.4%. Emergency assistance



**Fig. 5.12** Current and future use of care services among the elderly in Beijing. Source: Feng et al. (2012), 2012 Beijing Silver Industry Research Report, CDRF

will become the most needed service; its proportion is expected to increase to 53.2% of the aged population (Feng et al. 2012).

Faced with the increasing need for care services, the current provision is not satisfactory. Currently, channels for the elderly to obtain care services-related information mainly consist of three types: relatives/friends (22.2%), TV (19.3) and community/village (17.7). In contrast, 38.8% of aged people complain that there is no place for them to get information regarding care services (Feng et al. 2012). It is obvious that establishing a well-functioning channel to provide related information will be the first step forward in the development of care services.

At present, the average yearly expenditure on ‘caring’ services among the elderly in Beijing is CNY 5232. Whilst the potential average expenditure is expected to reach CNY 9102 in the coming years, an increase of 77.4%, a closer look at the particular factors in using the caring services shows that this is the aspect that most concerns the elderly. Among the aged population in Beijing, 61.4% regard “effect” as the most important concern. In addition, those who regard “attitude” as the most important concern account for 24% of the aged population. In contrast, people who regard “price” as the most important concern only account for 13% of the aged people.

#### ***5.4.5 Current Development of the Silver and White Industries in Beijing***

Through the above analysis concerning the current and potential usages in seven particular sectors of the silver industry, it is obvious that the needs of the elderly are very strong and the silver industry as a whole is expected to experience rapid

growth in the future. However, the big gap between the current and the future usages also reveals the slow development of the silver industry in Beijing at present. Currently, the supply of aged people oriented products and services are far from meeting the needs of the elderly. The current development of the silver industry in Beijing demonstrates the following characteristics:

High attention to the key unresolved issues: Policy makers, business leaders and non-government organisations have realised the importance of developing the silver industry. However, with respect to key points such as how to define silver industry, what are the respective roles of the public and private sectors in pushing forward the development of the silver industry, what are the suitable model(s) in producing/providing products/services in China's current context, an agreement has yet to be reached.

Mainly focusing on high-income groups: The current products/services provided in Beijing's market focus on the high-income aged people which only accounts for a small share of the total aged population. As for the middle or low-income aged people, there are few products/services available at present.

Different problems in each particular sector: At present, problems existing in each sector of the silver industry are different:

1. In the healthcare sector, the private sector has been involved to some extent. However, existing hospitals and facilities as a whole are far from meeting the elderly's healthcare needs.
2. In the old-age people oriented nursing products sector, although there has been some development in recent years, high-quality, individualised and diversified products are not available at present.
3. In the old-age people housing sector, although many enterprises have started a business, most of them are focusing on high-income aged people. Provision of housing aimed at low or middle-income aged people is not available.
4. In the old-age people oriented travel sector, some travel agencies have prepared specialised courses for the elderly. However, special consideration to the quality and safety is needed.
5. In the care sector, the sector as a whole has achieved good results. However, working conditions are comparatively poor. Therefore, retaining enough workers is still a big challenge for this sector.

## **5.5 Policy Recommendations for Pushing Forward China's Preparations for Its Population Ageing**

Pushing forward the development of the silver industry can only be regarded as one part of China's overall efforts in making adequate preparations for dealing with its increasing population ageing. To stimulate the development vitality of an ageing society in China, key policy recommendations include the following five aspects:

- **Urban planning:** Due consideration should be given to the elderly population and its support in urban planning and suitability for the elderly to live shall be taken as an important measurement for urban planning in the future, which is particularly true for community construction, urban function layout, urban transport, living facilities, etc.
- **Community construction:** To build communities for supporting the aged, city planners should improve relevant community capacities in terms of community planning, personnel allocation and system construction. Specifically, facilities and sites for the aged should be considered in community planning; a team of social workers should be recruited to satisfy the needs of the aged in a community; a co-operation mechanism between communities and relevant service institutions, such as hospitals, restaurants and shops should be established to form a comprehensive community-based elderly care system.
- **Social supporting system:** A social supporting system for the elderly is required. On the one hand, the Chinese government should gradually establish financial reserves to pay for the elderly care services through many new systems like nursing insurance. On the other hand, guided by uniform standards, relevant authorities should carry out nursing training and vocational certification, to accelerate the recruitment of elderly care nurses.
- **Health and social involvement:** In order to actively address population ageing, local health institutions are required to intensify their guidance and services for the aged against chronic diseases, shifting the focus of services from treatment to prevention. Besides, relevant authorities should take measures to enrich the life of the elderly and attract their participation in more social activities, in an attempt to significantly improve their health and social involvement.
- **Silver industry:** To develop more products for the elderly and foster the elderly care industry, policy makers should carry out surveys on the living needs of the elderly and make more efforts to develop designated services and products. Meanwhile, apart from stratifying the increasing needs of the aged, the elderly care industry should be built as a new economic growth point.

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# Chapter 6

## North Kyoto's Response to Japan's Shrinking Population

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### 6.1 Trends in Japan and the Northern Area of Kyoto Prefecture

#### 6.1.1 Trends in Japan

In Japan, the population is decreasing and ageing. During the coming two or three decades, local cities outside the metropolitan areas will be “marginalised cities”. This term is used to indicate that such cities will be unable to sustain city functions at certain levels in terms of quality and quantity, such as administrative, medical and educational services, retail and cultural activities. The tax bases of local city governments have become vulnerable because of both long-term economic stagnation and industrial losses. Their fiscal management faces serious difficulties every year. It is getting more difficult to maintain and improve existing urban infrastructure. The populations of both central and satellite cities located in metropolitan areas, including Tokyo and Osaka, are likely to decrease.

According to estimates by the National Institute of Population and Social Security Research, in 2060, the total population of Japan will be 86.73 million. In comparison to 2010, this means a decrease of 32.3%. In 2046, the estimated population will be below 100 million. This means that in 30 years, it will decrease by more than 20 million people. This is mainly because of the continuing low birth

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This chapter was contributed by the Research Centre for the Local Public Human Resources and Policy Development (LORC), Ryukoku University, Japan. After the submission of this chapter, LORC's fourth phase began in 2014. Its latest information can be found at <http://lorc.ryukoku.ac.jp>.

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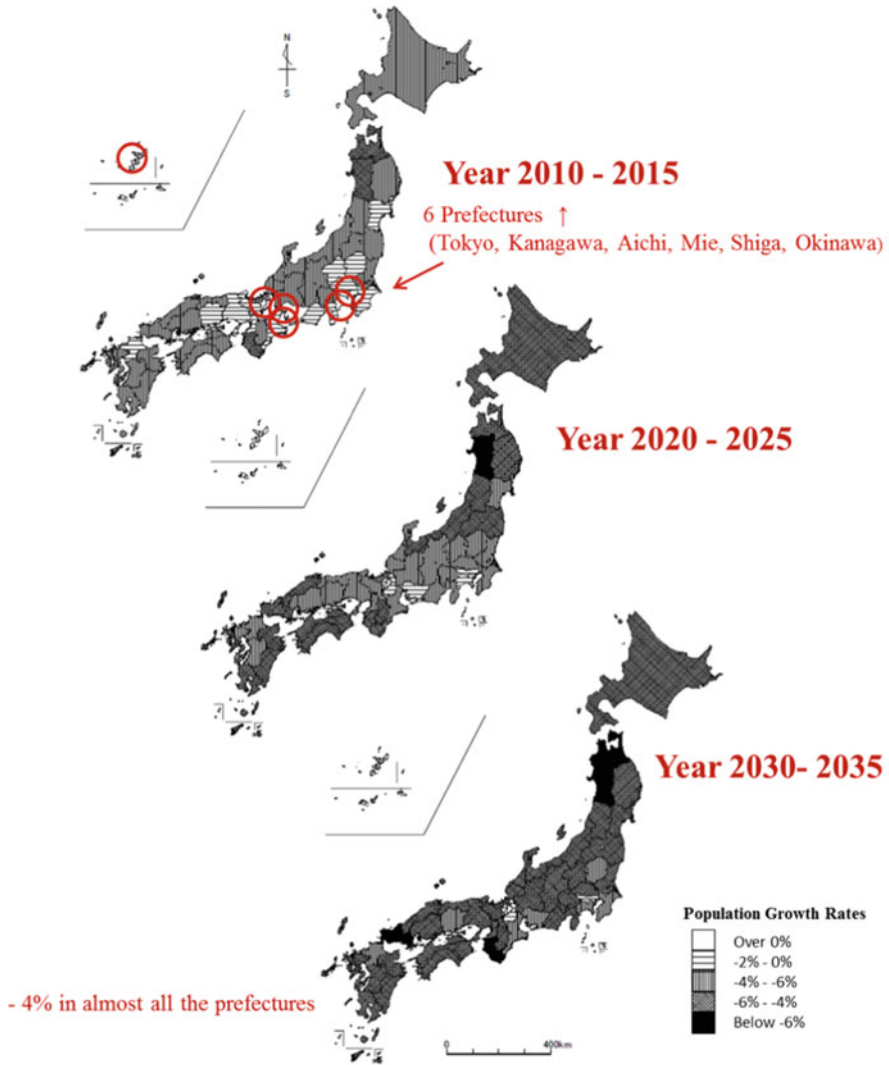
rate. If current birth rate declines continue, the current total fertility rate of 1.39 (National Institute of Population and Social Security Research 2010) will be 1.35 in 2024. This is caused mainly by people marrying later in life, as well as families having fewer children. Recent instability in employment has also led to an increase in the percentage of unmarried people, as the stability required for starting a family is lacking. The percentage of unmarried people aged 30–34 has reached 47% for males and 35% for females, according to the 2010 national census and *Nihon Keizai Shimbun* (2012).

During the period 2010–2015, the only prefectures in which populations are predicted to increase are Tokyo, Kanazawa, Aichi, Mie, Shiga and Okinawa (Fig. 6.1). Akita, Aomori and Wakayama are predicted to decrease by 4–6%. During the period 2030–2035, the rate of population reduction will be over 6% in Akita, Aomori, Wakayama and Yamaguchi, and most prefectures will experience a 4–6% decrease.

Core cities in local areas are experiencing remarkable levels of population decrease. Natural death rates, combined with social decreases have contributed to the rapidity of the overall population reduction. Of cities with more than 100,000 people, 27.5% have seen decreases in their populations (Yahagi 2009). During the period 2005–2006, 45.5% of the cities with more than 100,000 people had decreasing populations while 22 prefectures experienced drops in their populations. Recently, more than half of the cities with 100,000 inhabitants experienced population decrease. In the case of local small and medium cities (those with less than 100,000 people), their population reduction trends are even more remarkable, with most of them predicted to become marginalised cities.

The accelerated ageing of the population is caused by low birth rates and longer life spans. The average life span in 2010 was 79.64 years for males and 84.19 for females. In another 50 years, they will be 86.39 for males and 90.93 for females. Consequently, according to estimates by the National Institute of Population and Social Security Research, in 2060, the ageing rate (over 65 years old) will reach 39.9%. Longevity in society is not a bad thing. We are not living in the era of *Ubasuteyama* (“granny dumping”), and this longevity is something of which to be proud. The problem lies in the lack of balance between population and age structure. In ageing cities, where the young and the middle-aged have left, the economic and social conditions that support people’s daily lives will deteriorate. The sustainability of cities will be threatened.

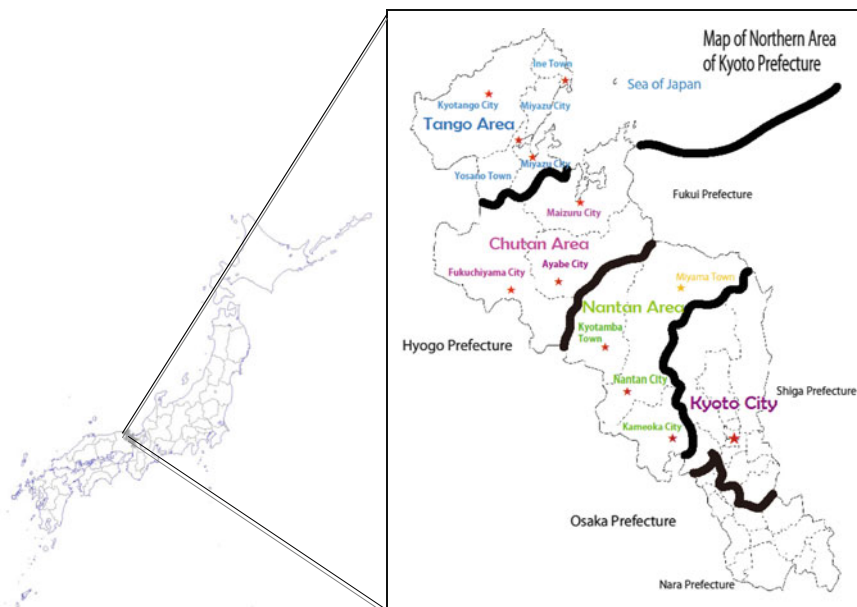
Japan’s population is not likely to increase in either the medium or long term. Also, ageing will not cease. Shrinkage will be one of the fundamental patterns of city typology. Except for times of war and disasters, urban researchers and policy developers have accepted growth and expansion as being self-evident, so they have focused on directing that growth or expansion. This is the first study and formulation of urban policies based on the premise of city shrinkage.



**Fig. 6.1** Prefectures experiencing a population decrease in Japan (2010–2035). *Note:* This map is for illustrative purposes and is without prejudice to the status of or sovereignty over any territory covered by this map. *Source:* Based on National Institute of Population and Social Security Research. Available at: <http://www.ipss.go.jp/index-e.asp>. Accessed June 2012

### 6.1.2 The Northern Area of Kyoto Prefecture

The Northern Area of Kyoto Prefecture is composed of the Chutan area (Ayabe City, Maizuru City, Fukuchiyama City) and the Tango area (Miyazu City,



**Fig. 6.2** Map of Kyoto Prefecture. *Note:* This map is for illustrative purposes and is without prejudice to the status of or sovereignty over any territory covered by this map. *Source:* Author

Kyotango City, Ine Town, Yosano Town) (Fig. 6.2). Ryukoku University’s project for regeneration of the Northern Area of Kyoto Prefecture, the “Research Centre for Local Public Human Resources and Policy Development”, adds the Nantan area (Kameoka City, Nantan City, Kyotamba Town) to its research targets. This chapter deals with the three areas combined as the “Northern Area”.

These areas are located in the north of Kyoto City at the east end of the Chugoku mountains. The mountains are not precipitous, though there are few plains. They are in a typical rural area. In winter, it snows a lot while in summer, it is often foggy. It is not pleasant in terms of climate. Recently, highways have been built; however, it is still a long way to Kyoto City. They are thus regarded as disadvantaged areas in terms of geography as well as climate. Rapid population reduction, as well as population ageing, are evident. The social and economic issues which shrinking societies face have been manifest for many years.

The main industry has been agriculture. People grow rice on the plains and vegetables and fruit in fields on the sloping land. However, population decreases and increases in the number of ageing people (more than 65 years old) in such rural areas makes the functioning of traditional communities fragile, which in turn threatens the sustainability of agricultural production. Agricultural production currently does not even reach the rate of 3% of gross regional product. The fabric industry was growing but has declined recently, resulting in the loss of an industrial

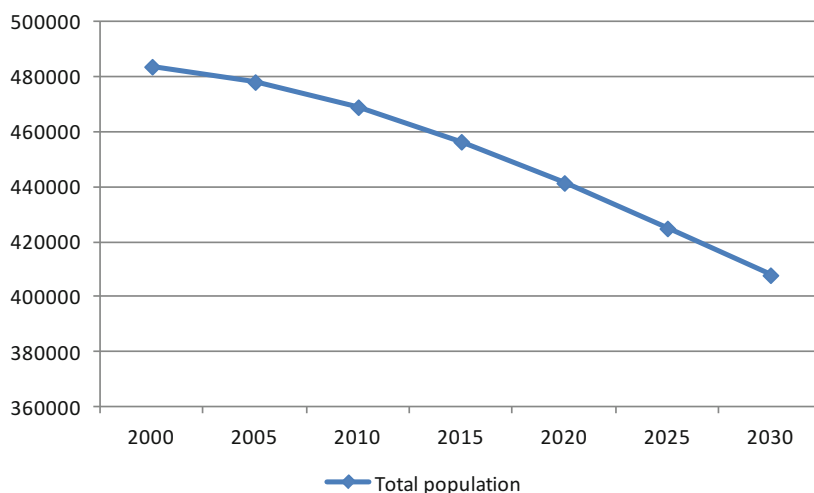
base. Consideration is being given to the development of a manufacturing-based food industry to operate in co-operation with agricultural production.

### 6.1.3 Demographic Change in the Northern Area of Kyoto Prefecture

According to the national census, the total population of the Northern Area of Kyoto Prefecture increased slightly between 1990 and 1995. After that, between 1995 and 2000, it decreased by 4035. The population of Kyoto Prefecture also decreased during 2000–2005. The population of the Northern Area began decreasing five years earlier than Kyoto Prefecture and has continued to decrease. The total population in 2010 was 469,023.

According to predictions by the National Institute of Population and Social Security Research, the population of the Northern Area is expected to decrease to 441,457 in 2020 and 407,890 in 2030. Compared to 2010, these estimates put it at 13% less (Fig. 6.3). The rate of population decrease of Kyoto Prefecture during the same period is estimated to be 7.7%.

The city with the largest population in the Northern Area is Kameoka City (92,399 inhabitants in 2010). It is located close to Kyoto City, which puts it in a good position for commuting to school and work, which was why Kameoka experienced population growth during 1995–2000. Maizuru City had a total population of 88,669 in 2010. It has a military base and its young population is relatively large. However, a population decrease was recorded there during



**Fig. 6.3** Demographic change of the Northern Area of Kyoto Prefecture (estimation) (2000–2030). *Source:* Based on National Institute of Population and Social Security Research. Available at: <http://www.ipss.go.jp/index-e.asp>. Accessed June 2012

1990–1995. Fukuchiyama City has a distribution centre for agricultural products in the Northern Area as well as government offices. Historically, it has been a core city to the north of Kyoto City, but as is seen in the other cities in the area, its population recorded a decrease, according to the national census of 2000–2005, at which time Fukuchiyama City became a shrinking city.

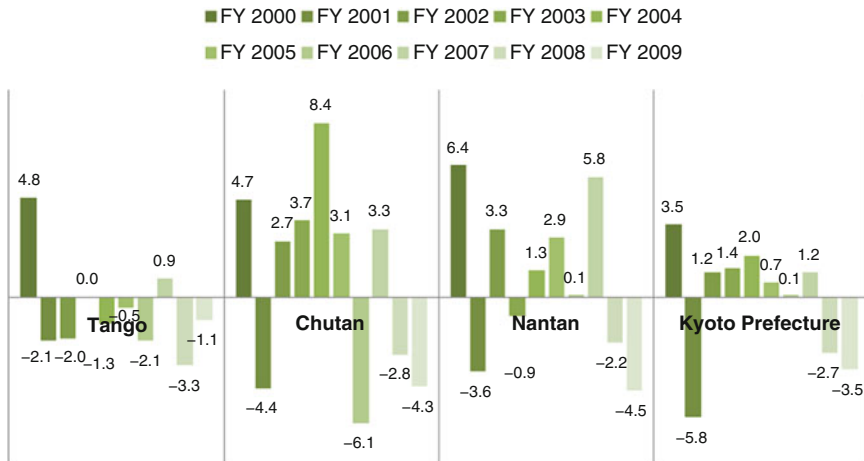
The other cities and towns are experiencing even more rapid population drops. For example, Miyazu City, facing Wakasa Bay, recorded a population of 19,948 in 2010, which was a 24.6% decrease (base year: 1990). Because of its remarkable population decrease, it faces difficulties in continuing community activities within the city. This results in the body blow effect by which the population decrease undermines the financial basis of the city.

The population of the Northern Area is also ageing rapidly. The ageing rate in 2000 was 22.4%. In 2010, it had increased by 5.1–27.5%. The rate is higher than the national average ageing rate of 23.0%, which is also the average rate of Kyoto Prefecture. In 2035, Miyazu City in the Tango area is expected to record an ageing rate of 50%, which means one of every two citizens will be older than 65 (Kyoto Prefecture 2012). At the same time, the working-age population (15–65 years old) will decrease. The percentage working-age people in the Northern Area of Kyoto Prefecture declined from 62.2% in 2000 to 59.0% in 2010. This rate is also below the Japanese national average rate of 63.8%.

### ***6.1.4 Economic and Industrial Trends in the Northern Area of Kyoto Prefecture***

The industrial structure of the Northern Area of Kyoto Prefecture differs from one region to another (Kyoto Prefecture 2012). In the Nantan area, where Kameoka City is located, and the Chutan area, where Fukuchiyama City and Maizuru City are situated, manufacturing industries account for one third of regional production. Industries include food processing, shipbuilding and metal industries. However, the Tango area, where Miyazu City is located, only recorded 16.7% manufacturing industries. Conversely, the Tango area recorded 22.4% for service industry production, which is approximately 6% higher than the other two areas. In Miyazu City, the service industry is the largest industry, accounting for 28.5% of its gross production in 2009. This implies that its tourism industry, which takes advantage of the scenic beauty of Wakasa Bay, supports its regional economy.

The stagnation of economic activities has been occurring for a long time in the Northern Area of Kyoto Prefecture. This is because the Japanese economy is still not able to escape from the long-lasting recession, and the investment which leads to new employment has been small, so the population is still decreasing. Therefore, this is considered to be a structurally depressed area. In the Tango area, during the decade from 2000 to 2009, the economic growth rates for eight fiscal years showed negative growth. Negative growth has become the norm. It is assumed that it will be



**Fig. 6.4** Transitions of economic growth rates of the Northern Area of Kyoto Prefecture. *Source:* Kyoto Prefecture (2009), Kyoto-fu Chousonmin Keizai Keisan (Kyoto Prefecture Municipal Accounts)

difficult for economic growth rates to become positive, sustainable growth in the future. Both the Chutan and Nantan areas recorded negative growth for four fiscal years (Fig. 6.4).

The employment situation is also serious because of the long-term recession. While the official ratio of job offers to jobseekers in the Northern Area of Kyoto Prefecture has shown slight signs of improvement in the last two years, it continues remain below 1.0 and many people have given up looking for work.

According to Kyoto Prefecture, economic stagnation naturally leads to a decrease in incomes. The distributive income per capita for fiscal year<sup>1</sup> 2009–2010 in the Tango area was JPY 1,896,000, a 13.1% decrease compared to the 2000–2001 fiscal year. The Chutan area recorded an income per capita of JPY 2,415,000, a 5.5% decrease. In the past decade, the regional gap within the Kyoto Prefecture has expanded rapidly. In fiscal year 2000–2001, the distributive income per capita in the Tango area amounted to 70% of that of Kyoto City, but in fiscal year 2009–2010, the gap extended to 62.2%. This income gap is identified as a factor which accelerates the population exodus from the disadvantaged areas to metropolitan areas.

<sup>1</sup>Japanese fiscal year starts at the beginning of April and finishes at the end of March the following year. Also known as FY.

### **6.1.5 Local Societal Trends in the Northern Area of Kyoto Prefecture**

In order to sustain a comfortable life in an ageing society, medical facilities are essential. In the Northern Area of Kyoto Prefecture, the number of hospitals has not changed remarkably yet the number of hospital beds has increased slightly. According to the Ministry of Health, Labour and Welfare's Survey of Physicians, Dentists and Pharmacists (2010), the number of medical doctors engaged in hospitals, for each secondary medical care block, is 286.2 per 100,000 people in Kyoto Prefecture, which is ranked number one nationally (the national average is 219.0). However, in the Northern area the numbers are much lower than the average for Kyoto Prefecture: Tango (152.6); Chutan (209.2); Nantan (170.2).

According to the Kyoto Medical Practitioners Association, the Northern Area of Kyoto Prefecture is faced with various challenges such as "unbalanced locations of doctors", "lack of medical doctors", "lack of a combined co-operative medical centre", "elderly-friendliness (access, etc.)", and "improvement of the emergency medical system". Additionally, the number of students at primary, junior and high schools is decreasing, reflecting the declining birth rate. The total number of primary schools in Kyoto Prefecture decreased by 20 from 2000 to 2010. Ten of them were in the Northern Area of Kyoto Prefecture.

If schools are closed or merged, problems such as longer commuting distance will arise. A decision also needs to be made regarding how the unused school buildings and gyms can be utilised.

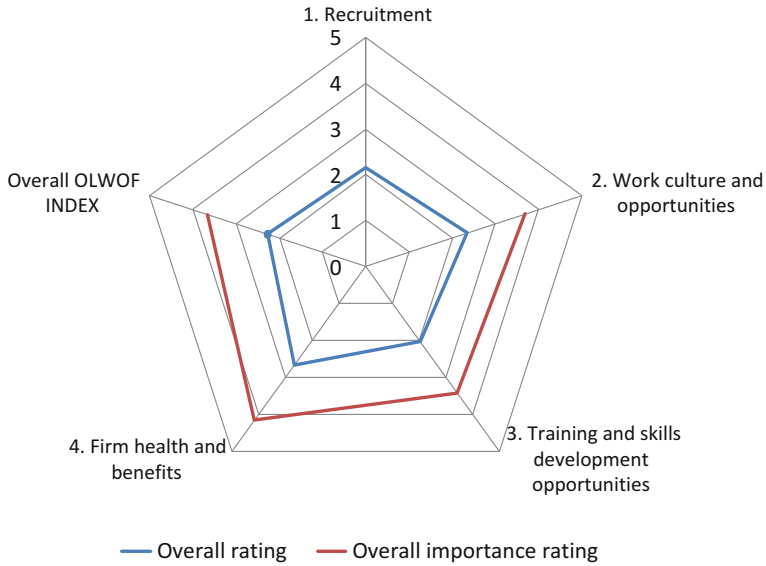
In the Northern Area of Kyoto Prefecture, there has been an increase in the number of people who receive welfare benefits (public assistance). The main causes are considered to be long-lasting recession and a lack of new employment. Presumably because farmers are self-sufficient to some extent in rural areas, the relative increase in the number of people who receive welfare benefits is seen chiefly in urban areas. The increases in Maizuru City, Fukuchiyama City and Kameoka City are significant. Maizuru City's rate of public assistance (per 1000 people) is 14.8%, which is the highest in the Northern Area of Kyoto Prefecture.

### **6.1.6 OECD Older Workers Friendly Places to Work (OLWOF) Index and Elderly Friendly Places to Live (ELFRI) Index**

In collaboration with the OECD and LORC, questionnaires for the Older Workers Friendly Places to Work (OLWOF) Index and the Elderly Friendly Places to Live Index (ELFRI) were used in the Northern Area of Kyoto Prefecture. The results are reported below.

The overall OLWOF Index out of 5 (1 is poor, 5 is excellent) for the Northern Area of Kyoto Prefecture is 2.3, which is categorised as an area with a poor





**Fig. 6.5** OLWOF index of the Northern Area of Kyoto Prefecture (2012). *Source:* Author

OLWOF Index. More specifically, the OLWOF topic index overall rating is as follows: recruitment: 2.2; work culture and opportunities: 2.3; training and skills development: 2.0; firm health and benefits: 2.0. Significantly, the overall importance rating of OLWOF for the Northern Area of Kyoto Prefecture is 3.7, which categorises the area as average. More specifically, the importance of OLWOF topics were rated as follows: work culture and opportunities: 3.7; training and skills development: 3.4; firm health and benefits: 4.2 (Fig. 6.5). This slow realisation of the importance of older persons working for the regional and local economy may reflect the delayed response in developing strategies to keep older persons in employment and contributing to the regional and local economies. It reflects a significant policy gap between reality and what ideally should be done.

The overall ELFRI Index out of 5 (1 is poor, 5 is excellent) for the Northern Area of Kyoto Prefecture is 2.7, which is below average as an elderly-friendly place to live. More specifically, the ELFRI topic index is as follows: outdoor spaces and buildings: 2.7; transport: 2.7; housing: 2.5; social participation: 2.9; respect and social inclusion: 3.1; civic participation and employment: 2.7; communication and information: 2.6; community support and health services: 2.7 (Fig. 6.6). Generally, according to the index, the Northern Area of Kyoto Prefecture is not an elderly-friendly place to live, with plenty of room for improvement and policy focus.

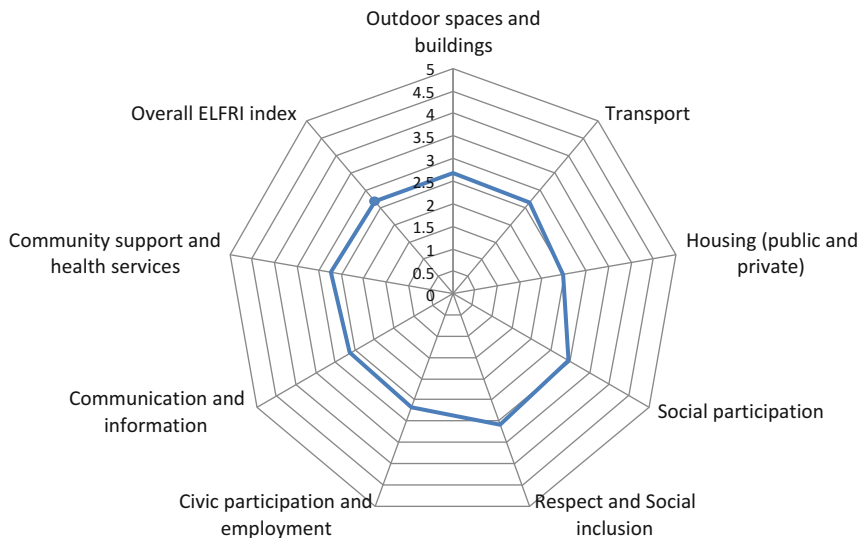


Fig. 6.6 ELFRI index of the Northern Area of Kyoto Prefecture (2012). Source: Author

## 6.2 What Can Universities Do? Kyoto's Challenges

### 6.2.1 Higher Education in Japan and Vocational Education and Training (VET)

In Japan, the expectation that higher education institutions will play certain roles in the field of vocational education and training (VET) has been enhanced recently (OECD 2000). However, the Japanese government has not yet been successful in establishing a qualification framework for VET. There is no framework that defines the relationship between general education and VET like the European Qualifications Framework (EQF). There are no strategies or scenarios on how higher education institutions should be involved in VET.

There are qualifications for specific professional occupations such as medical doctors and teachers. To obtain these qualifications, study of the formal courses provided by higher education institutions is required. Other certification and skills such as information and communication technology (ICT) are obtained outside higher education institutions. The higher education institutions may provide learning opportunities, but, mostly, certification and skills accreditation relating to jobs are obtained outside higher education institutions.

Generally, Japanese companies and administrative institutions have not taken VET by higher education institutions positively. Employment practices in Japan, which are based on the pillar of lifelong employment, expect employees to share their skills and abilities with their workplaces rather than gain general professional skills and vocational knowledge from them. Companies and administrative

institutions prefer generalists rather than specialists. They expect workers to attain specialties and skills through on-the-job training. Such training is not based on systematic programmes, but is rather focused on the accumulation of experience. Recently, this trend has started to change.

The views of companies with regard to VET have been influenced by low economic growth over long periods of time. More companies are seeking career education training from higher education institutions. Events such as the Lehman Brothers shock, the European financial crisis and the Great East Japan Earthquake caused a serious economic recession. The employment issue has become a top priority for both management and labour.

Since the adoption of the Decentralisation Law in 2000, local authorities have begun to request the capacities of administrative officers to be enhanced. Not only local decentralisation, but also the changes to local policies that put more emphasis on the participatory process, have led to local authorities requiring administrators to improve their communication skills. Administrative institutions consider that such officials should have these abilities before beginning their employment.

Companies and administrative institutions are changing their understanding of human resource cultivation and VET. This is part of a lasting change rather than a short-term change. By examining the data on the university attendance ratio and the unemployment rate, it is possible to understand that such a lasting change is commonly seen in OECD member countries (OECD 2008).

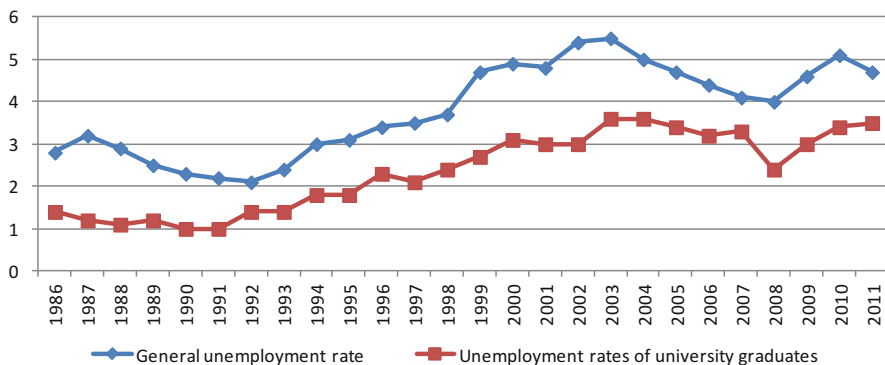
The university attendance ratio in Japan was approximately 10% in the 1950s. It increased rapidly until the middle of the 1970s, peaking in 1976 at 38.6%. It decreased slightly until the 1990s when it increased again. In 1993, it was over 40%, and since 2005, it has been over 50%.

In Japan, during the development of the social economy, from the high-growth period through the stable growth period to the period of the bubble economy, the belief that more highly educated persons are required has been growing. As a result, a society has evolved that puts increased emphasis on educational background.

As a global trend, the unemployment rate of highly educated people is low. Together with realising the importance of a knowledge society and achieving technological advancement, there has been a growing tendency to require higher educational qualifications. The increased rate of university attendance in Japan is in accordance with this global trend.

However, the unemployment rate of university graduates in Japan increased rapidly from 1992 when the Japanese economy went into recession, brought about by the collapse of the bubble economy (Fig. 6.7). The rate of increase is almost the same as the general unemployment rate. Throughout the 1990s, the general unemployment rate continued to increase but, in comparison with its previous levels, the improvement in the unemployment rate of university graduates was not remarkable. Through the 2009 Lehman shock, the general unemployment rate declined again, but the continuing tendency for the unemployment rate of university graduates to decline became more serious.

The difficulties faced by highly educated people in the labour market indicate that the proportion of the labour force with higher education qualifications may



**Fig. 6.7** Unemployment rates of university graduates (1986–2011). *Note:* In 2011, Iwate, Miyagi and Fukushima were not counted. The rates shown are as at February of each year. *Source:* Author based on Ministry of Internal Affairs and Communications (2012) “Labour Force Survey”. Available at: <http://www2.tcn.ne.jp/honkawa/index.html>. Accessed December 2012

become excessive. A number of OECD member countries are facing similar situations. The labour market seeks to move towards the knowledge society, and the younger generation, which feels anxious about a lack of employment options, goes to university. Subsequently, as mentioned above, the university attendance rate in Japan increased during the 1990s. University students in Japan are mainly the younger generation, and it is quite rare to find people who entered university for the purpose of lifelong learning.

Although the unemployment rate in Japan was higher than the Netherlands, Sweden, the United Kingdom and the United States for quite a while, it is currently lower. However, the anxiety over unemployment that young university graduates feel is not only due to increasing unemployment rates, but also to the unstable conditions caused by increases in temporary employment. Social changes, which are not measurable by unemployment rates, are having great impacts on the younger generation in Japan.

A comparison of permanent full-time and temporary part-time employment shows that permanent employment increased until 1997, but has continued to decrease since then, while the number of temporary or casual jobs has increased continually. The proportion of temporary jobs has increased, from 2.0% in 1990 to 35.4% in 2011 (Fig. 6.8). Currently, more than one in three people employed in industries other than agriculture and forestry is a temporary or casual employee. The rate of casual employment for the population aged 15–24, both male and female, has increased rapidly, which had become a social issue.

The school dropout rate in higher education is 10%, which is low in comparison to the average rate of 31% among OECD member countries (OECD 2008). The goal to increase the ratio of people who enter higher education institutions and, at the same time, to decrease the school dropout rate, has already been achieved to a large extent in Japan. Therefore, it is believed that, in order to eliminate the younger generation’s anxieties about employment, higher education institutions should play



**Fig. 6.8** Regular employment versus non-regular employment (1990–2012). *Note:* Targeted at all employment areas except agriculture and forestry (excluding executives). The figures are the averages between January and March, and prior to 2001 were as at February of each year. Non-regular employment includes part-time, temporary staff, contract workers and casual staffs. In 2011, the figures exclude Iwate, Miyagi and Fukushima. Source: Author based on Ministry of Internal Affairs and Communications (2012) “Labour Force Survey”. Available at: <http://www2.ttcn.ne.jp/honkawa/index.html>. Accessed December 2012

more positive roles. Such circumstances lead to the hope that higher education institutions will become involved in VET.

**6.2.2 Research Centre for the Local Public Human Resource and Policy Development (LORC), Ryukoku University, and the Kyoto Model**

What kind of reform can higher education institutions make so that companies and administrative institutions change their views on human resources and VET and help younger people avoid the social problems associated with not having stability in work? The Research Centre for the Local Public Human Resources and Policy

Development (LORC), Ryukoku University was established in 2003 in order to respond to this question as one of its most important research missions.

Funded by Ryukoku University and the Japanese Ministry of Education, Culture, Sports, Science and Technology (MEXT), the centre started its activities not only as research studies, but also to make practical policy recommendations as a research centre that interacts with local communities. The main features of LORC's approaches are, firstly, that it carries out research studies that attempt to link the solutions of local social issues and human resources. Secondly, research outcomes are to be shared through partnership and collaboration between organisations that belong to various sectors such as local governments, local communities, non-profit organisations (NPOs) and business associations.

Kyoto City, where LORC is located, is a historical city, and at the same time, a university city. According to the FY 2009 general survey of schools, there are 37 universities and colleges in Kyoto. Kyoto has the second largest number of universities and students after Tokyo, and 139,237 students commute to Kyoto City. Approximately 10% of Kyoto City's total population of 1,470,000 are university students and university professors.

According to the same general survey of schools (FY 2009), there are 48 universities and colleges in Kyoto Prefecture. The universities, including the 37 universities in Kyoto City mentioned above, which have more than one campus are counted based on the location of their headquarters. Most universities and colleges are situated in the southern area of Kyoto Prefecture. In the Northern Area of Kyoto Prefecture, there is only one university and one college.

In considering the role to be played by higher education institutions in human resources and VET, it is necessary to take these features into account. LORC proposed to carry out a collaborative project in order to realise research outcomes for nine universities in Kyoto Prefecture which have social science departments. Those involved are Kyoto University, Kyoto Prefectural University, Kyoto Sangyo University, Kyoto Tachibana University, Kyoto Bunkyo University, Seibi University, Doshisha University, Bukkyo University and Ryukoku University. A series of recommendations were developed in response to three development phases.

In the first phase of LORC (FYs 2003–2007), through partnership and collaboration among various sectors, a system for human resources to tackle local issues was proposed. In order to foster the human resources that have civil and public minds, an education programme targeting master's programmes was developed. It was also pointed out that it was necessary to establish a framework that will be recognised socially as well as academically, to ensure the quality of qualifications (Shiraishi and Niikawa 2008; Tomino and Hayata 2008; Tsuchiyama and Ooyano 2008).

The second phase (FYs 2008–2010) focused on the socialisation and realisation of research outcomes (Shiraishi et al. 2011; Saito et al. 2011). It was concluded that the framework to be developed in the Kyoto area should be a qualification framework related to the European Qualifications Framework (EQF). To achieve these goals, a platform for collaboration with local universities was established, involving nine universities, one university's collaborating organisation, four economic groups, two local governments, as well as one local government's collaborating organisation.

LORC also recommended the development of an educational programme linked to general education at Levels 5–7 of EQF in the field related to policy science. In order to ensure the competence of learners, as well as to encourage recognition of the qualifications, the Consortium for Local Public Human Resources Development (COLPU) was established as an institution for public recognition.

The third phase (since 2010), pursues the development of more advanced educational programmes for human resource cultivation, to match the needs of local communities. Using the Northern Area of Kyoto Prefecture as a field site, as it is an area in which population reduction and economic and social decline are seen, a “Kyoto Model” is being developed and carried out, which links solutions to social problems with training in human resources.

Derived from the platform of universities' local collaborations, the Community and University Alliance for the regeneration of the Northern Kyoto Area (CUANKA) was established in 2012 as a formal organisation for collaboration. In order to develop the projects of CUANKA, the nine participating universities received subsidies from MEXT together with funds from local governments for individual projects.

The Kyoto Model (Fig. 6.9) that LORC recommends is intended to foster human resources expertise to allow participation in policy making and, simultaneously, implement processes for solving problems in local communities as a process of university education and VET. Through collaborations between universities and stakeholders in local communities, learners will find local agendas and design policies as well as implement them. Students will not only experience practical involvement, but also study academic approaches and practical policy analyses at universities.

In the Kyoto Model, universities develop and provide the educational programmes which are equivalent to Levels 5–7 of EQF, and the local communities provide the learners with the opportunities for practical involvement. The learners will earn qualifications, obtained through their involvement in solving the problems of local communities, which are certified by COLPU.

If the Kyoto Model functions well, it will enable the human resources graduates who have certain knowledge, skills and competences that are helpful for problem-solving in local communities to find work in those communities. Such graduates are not merely competent workers: they have certain roles to play in society.

The keys to success for the Kyoto Model are whether or not universities can develop policies that help solve local problems, and whether it is possible for local communities to welcome and accept such human resources. By linking the research resources of nine universities, it is hoped that a collaborative university system will be established that can respond to various local needs. CUANKA is considering ways to utilise the human resources skills developed there.

The Kyoto Model will demonstrate roles to be played by higher education institutions as companies and administrative institutions change their understanding of human resource development and VET and their importance in helping with social issues such as employment for younger people and a declining population together with economic and social stagnation.

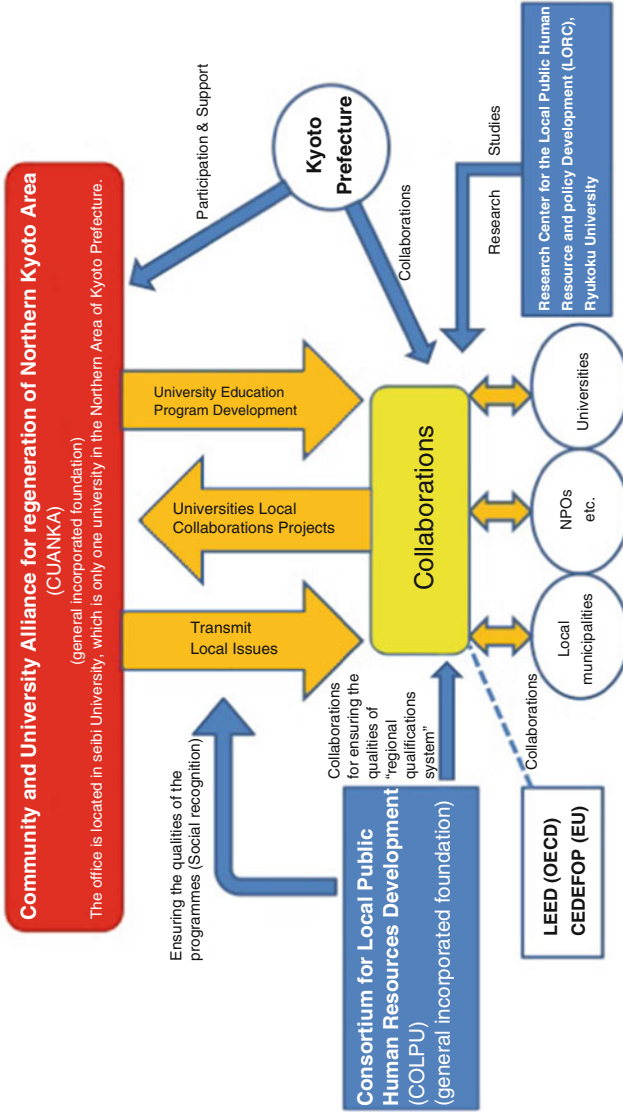


Fig. 6.9 Universities' local collaborations: The "Kyoto Model". Source: Author



### **6.3 Regeneration of Northern Kyoto Area (CUANKA): Trialling the Community-University Alliance**

#### ***6.3.1 The Critical Situation that Local Communities Face in the Northern Area of Kyoto Prefecture***

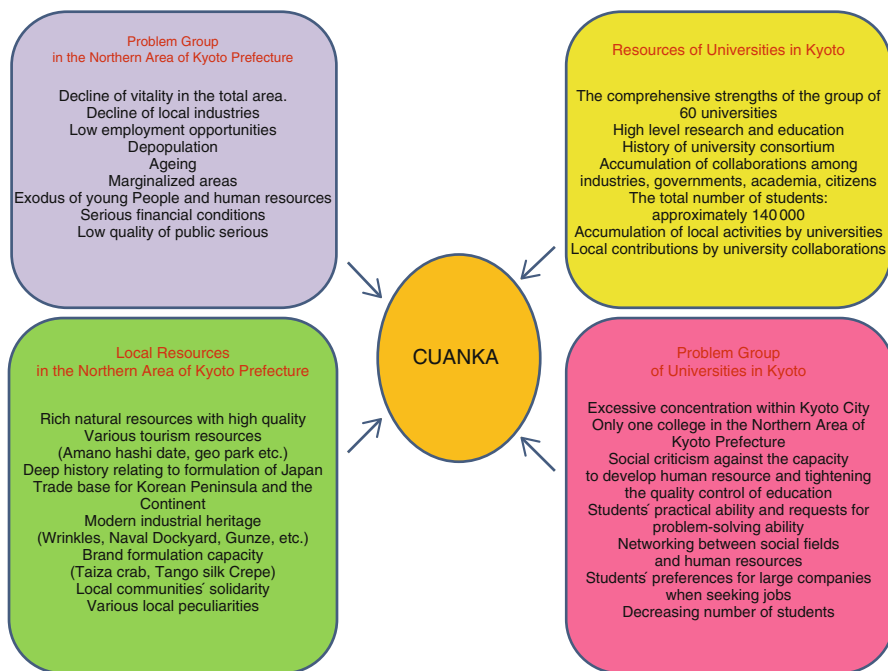
The Northern Area of Kyoto Prefecture is a typical example of the declining Japanese population problem. Compared to other Japanese local areas, this was a rich area for around 1500 years. The Northern Area of Kyoto Prefecture was very close to the former Japanese political centre (Nara and Kyoto) and Japanese economic centre (Osaka). Trade with Korea and the People's Republic of China in ancient days, shipping trade around the Sea of Japan in the middle ages and Edo era, and the transport of products provided the Northern Area of Kyoto Prefecture with a distinct advantage.

However, the area has changed greatly, because of Japan's rapid economic growth after World War II. The traditional trading between Japan and the Asian continent was lost due to the Cold War between the east and the west, which meant there was a decline in trade. Japan's growth drained young labour forces from the local areas, including the rural areas, to a large extent. This led to the so-called dual structures of Japanese society, in which Japan could not escape from the phenomenon of rich urban areas and deteriorating economic and social rural environments. Moreover, advancing industrial structures with their associated mass production and mass consumption, as well as shifts in the transport system from rail services to a rapid transit system of cars and expressways, meant that local central cities like Fukuchiyama became disadvantaged areas that cannot recover easily. In this way, the Northern Area of Kyoto Prefecture has become symbolic of the depressed areas among local cities and rural areas.

The following section outlines how CUANKA was established to solve these various social problems which are becoming more prominent due to the ageing society and shrinking population.

#### **6.3.2 CUANKA**

Approximately 60 universities are located in Kyoto Prefecture, and research and education activities of a high standard are carried out here. In Kyoto City, since 1997, there has also been the Consortium of Universities in Kyoto, which is a public interest incorporated foundation that carries out research and education as well as local socially supportive activities. A large-scale international research project on sustainable social systems has been conducted since 2003, funded by MEXT, which led to the establishment of LORC. Since 2008, supported by MEXT, a strategic university alliance project relating to human resource development and the



**Fig. 6.10** Local communities' and universities' collaboration for particular problems and social resources groups. *Source:* Author

establishment of a qualification system in a partnership society has been carried out collaboratively by nine public policy universities.

Through such projects, the necessity for “global public human resources”, highly skilled workers who can take a lead in solving problems through cross-sectional activities, has become clear. Such problems include numerous issues that local communities may face in the globalising world. This led to the establishment of a system to foster “global public human resources” based on collaboration between industry, government, academia and citizens in Kyoto. The system has already established a qualification system, based on the human resource development curriculums of universities, which corresponds to Levels 5–7 of the European Qualifications Framework in the EU. Since 2010, COLPU, as a core institution, has taken responsibility for operating the system.

Based on outcomes from the human resource development system of “regional qualification framework for policy making” in Kyoto, CUANKA attempts to solve problems in the Northern Area of Kyoto Prefecture. Comprehensive and consistent co-operation between stakeholders and local universities promote the projects outlined below, which aim to advance the reform of university education programmes as well as human resources development (Fig. 6.10).

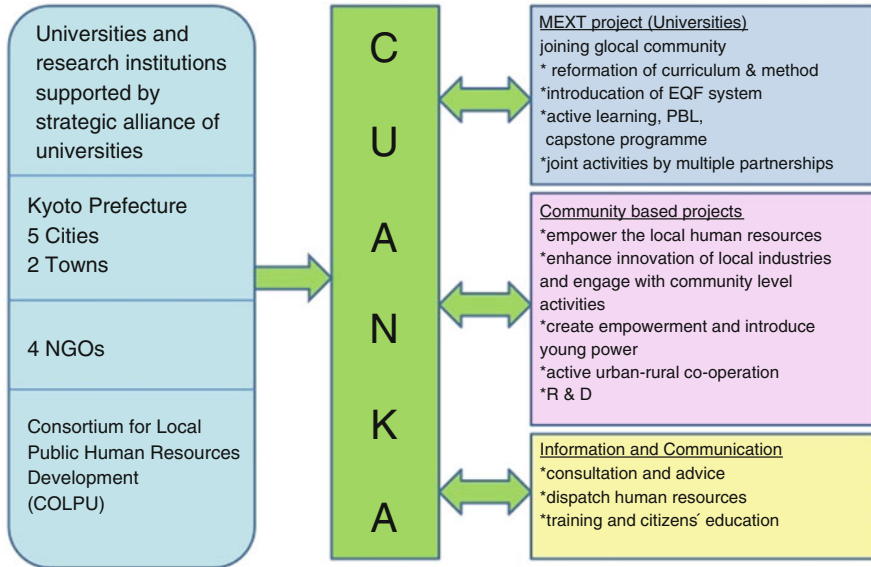


Fig. 6.11 System of CUANKA. Source: Author

CUANKA's three main activities are:

1. Fostering global public human resources that can respond to various issues in the Northern Area of Kyoto Prefecture;
2. Establishing a consistent collaborative system of industries, governments, academia and citizens in order to promote urban-rural networking and to utilise cross-sectional human resources; and
3. Solving local problems and revitalising local communities.

CUANKA is composed of local universities and stakeholders involved in community development in the Northern Area of Kyoto Prefecture (Fig. 6.11). The operations of CUANKA are summarised as:

1. appoint co-ordinators for each local area and university;
2. establish university collaboration offices and facilities for locals and universities to network in the Northern Area of Kyoto Prefecture;
3. Have universities carry out studies and research that are designed to help solve local issues collaboratively; and
4. Kyoto Prefecture provides basic financial support and works with CUANKA at the project level.

CUANKA conducts the actual project so that universities and local communities can share mutual benefits through collaborative co-operation, targeting the Northern Area of Kyoto Prefecture. University-local partnerships can respond freely to the characteristics and scale of the problems. The financial resources necessary to

implement the projects are available from various sources. They include government subsidies (including MEXT), subsidies through local grants from Kyoto Prefecture, the resources of local municipalities and relevant groups, as well as grants from private foundations.

CUANKA conducted four different types of pilot projects in order to have a broad base:

1. Whole Area Type: Leadership programme to promote entrepreneurship and to encourage local activities, implemented by Kyoto Prefecture and COLPU, sponsored by Kyoto Prefecture;
2. Allied Area Type -1: Research and analysis of the structure of consumer behaviour to build up an innovative commercial policy, implemented by two universities, three cities, three chambers of commerce and COLPU, sponsored by three cities and MEXT;
3. Allied Area Type -2: Aims to develop eco-tourism with motor driven bicycles supported by a renewable energy system, implemented by two universities, Kyoto Prefecture, three cities and three cities' tourist offices, the local railway company and COLPU, sponsored by Kyoto Prefecture, COLPU and MEXT; and
4. Single Area 1 Issue Type: Local regeneration by establishing a system for barrier-free tourism in Miyazu City, implemented by two universities, Kyoto Prefecture, Miyazu City, Miyazu Chamber of Commerce and Industry, a tour operator and COLPU, sponsored by Kyoto Prefecture, MEXT and COLPU.

The areas subsidised by MEXT in 2012 as university collaboration projects are:

1. local regeneration through networking between universities and locals, utilising Satoyama resources;
2. policy marketing research projects;
3. 1300th anniversary project for Tango's foundation;
4. formulating a business model to promote "sport tourism" in the Kita Kinki area;
5. building residential-type facilities for local-university networking; and
6. introduction of renewable energy to local communities.

CUANKA's operations have just begun. It is hoped that declining areas will be revived by supporting social entrepreneurs, fostering green industries and human resource development to enhance social activities in terms of quality and quantity.

## **6.4 Policy Implications and Recommendations**

### ***6.4.1 Policy Implications***

In the Northern Area, which is declining economically and socially, tertiary education institutions and human resources are lacking. The case of Kyoto Prefecture highlights the importance of establishing the mechanisms (regional capacities) by

which universities located in urban areas can become involved in local affairs. They could tackle local problems such as the creation of employment opportunities and help define and meet aged care needs, as well as engage in environmental conservation, among other issues, by forging networks between local stakeholders, NPOs, local businesses and community organisations.

The case of Kyoto Prefecture is unique in that numerous universities are establishing multi-level collaborative networks by linking their special fields of study and laboratories. Universities are doing more than providing knowledge and human resources to the area unilaterally. In the "Kyoto Model", universities gain new knowledge by setting the area as their target for study while at the same time students studying local affairs and urban policies gain "training on the spot". Students can receive training to formulate local and urban policies and to solve local issues practically. The "Kyoto Model" is advantageous in that universities and local communities are in a reciprocal relationship.

The Northern Area of Kyoto Prefecture is an area which is rich in nature, yet has an ageing and rapidly decreasing population. In order to attract the younger generation, it will be vital to create employment opportunities and jobs for both the elderly and the young in the future. At the same time, the "Kyoto Model" will be challenged to decide how to establish green markets (environment) and silver markets (labour markets or consumer markets for the elderly). Some experimental and challenging efforts are being made, but the question is how to create a surge which can lead to local regeneration in the future (OECD 2011).

In the "Kyoto Model", in order to ensure the practical abilities of students, "on-the-spot" training is provided, particularly focusing on formulating policies. Universities are also often accepted by local communities as being a recognised public policy expert. The aim is to foster highly educated people, mainly at master's level, who can take the lead in the local regeneration process, by being positively committed to depressed areas faced with social and economic difficulties.

### ***6.4.2 Policy Recommendations***

1. Demographic change, which results in population reduction and ageing in this case, is caused by diverse conditions. Due to adjustments in the industrial structure, production sites have been moved overseas. Low birth rates have accelerated because of the change in values in people's lives. Additionally, the suburbanisation of housing in metropolitan areas often leads to lower numbers of people living in the central cities. Therefore, the policies pursuant to the sustainability of shrinking cities should be multi-dimensional, and urban policy studies need to be interdisciplinary. Additionally, with regard to government, in order to respond to issues efficiently and effectively, it is necessary to determine the appropriate scale and level of approach (all recommendations from Martinez-Fernandez et al. 2012).
2. Local cities experiencing decreasing populations, and economic and social decline for various reasons, rely on public investment and still face the difficulty

of attracting private investment. What is needed for revitalisation and regeneration is economic and social development which makes use of historical, geographical and natural attributes. In other words, pursuing the possibility of endogenous development is the only way to survive, enabling the area to capitalise on local features in the era of economic globalisation. By choosing such a path, it will be possible to ensure quality of life for local people.

3. Local cities that have decreasing and ageing populations are faced with the problem of scarce human resources. To utilise limited human resources, it is imperative for local community members, such as local government, economic groups, cultural groups, businesses and non-profit organisations, to be more conscious stakeholders, and to establish the frameworks by which they collaborate with each other. The policy direction that Kyoto Prefecture has taken, making use of the experience and skills of older workers, providing further opportunities for them, and offering them the chance to play active roles in local communities, should be welcomed.
4. Universities, which are storehouses of intellectual and human resources, should contribute to the regeneration of local cities which are facing the problems of demographic change and decline, irrespective of where they are located. In the Northern Area of Kyoto Prefecture, innovative and creative efforts are being made, in that numerous universities outside the areas in question collaborate and form partnerships with local stakeholders to cultivate human resources and conduct studies of regeneration programmes. The exchanges between universities and local communities have brought about numerous creative projects. The outcomes of such efforts can be exported to others as the “Kyoto Model”.
5. One of the “Kyoto Model’s” weaknesses could be in regard to the effort to create new employment, which should be one future policy agenda. Local cities with rural areas and beautiful countryside have natural assets. It is necessary to create new businesses that make the most of the green assets, develop opportunities for the elderly to work and generate consumer markets for the elderly (generally called “silver markets”), at the policy level. Further study is needed in this regard.
6. It is difficult for one single city to solve the issues of demographic change and sustainability. It is essential to develop collaboration between cities, which can respond to issues at the city region level. Additionally, it is necessary to build diverse networks with metropolitan cities in remote places. Kyoto Prefecture needs: more positive attempts to build a distribution system by which organic agricultural projects are sold directly to people living in urban areas; the development of agritourism; and extension of housing subsidies which encourage settlement from urban areas.
7. Lastly, statistical data which ensures quality and comparability and helps to formulate policies is needed. Ensuring comparability of knowledge bases regarding how and by how much cities are shrinking enables tailor-made policies and measures to be designed, and contributes to practical and efficient policy decisions. For this, measurement methodologies also need to be examined, including scales for the analysis.

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# Chapter 7

## Generation Shift in the Swedish Labour Market

Torbjörn Israelsson, Marwin Nilsson, Jan Sundqvist,  
and Timo Mulk-Pesonen

This chapter highlights the general availability of labour and retirements nationally, regionally and from a local perspective in Sweden. The growth of the working-age population will have consequences for labour supply and future employment trends. Without a continuous increase in the labour supply which would make it possible to increase employment in long term, it will be difficult to achieve improvements in economic welfare, overall and in different regions. A generational shift had raised when the so-called baby boomer generation from the 1940s and beginning of 1950s leaves the labour market. The purpose of this analysis is to describe future developments if current labour market trends persist. The chapter highlights various measures which can be taken in order to alter future labour market prospects regarding the supply of labour in the sense that more persons become available for work.

### 7.1 The Generational Shift and Large-Scale Retirement

The total population of Sweden is expected to increase by 1,628,000 persons between 2015 and 2030 and reach 11,480,000 in 2030. This is a faster increase compared with previous 15-year period. The increase in the population is determined by a positive net birth rate as well as by net migration. Net migration is estimated to be especially high during period 2016 to 2020.

The net birth rate is calculated to increase from less than 30% to about 60%, while net migration is estimated to decrease from 80% (2016–2019) to 60% (2020–2029), both expressed as a share of the change of total population. The

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fertility rate in Sweden was 1.9% in 2015, which is high compared with other European countries. Sweden needs a long-term fertility rate of 2.1 to maintain an unchanged level of population.

The supply of labour has increased significantly since the end of the 1990s, especially over the last 10 years. This is the result of favourable developments in the labour market combined with a rapid growth of the working-age population (16–64 years old). The increase in the working-age population in recent years is mainly attributable to large net immigration. In the future, increases in the working-age population will be dependent on persons born in other countries whereas the number of persons born in Sweden will continue to decline. However, the structure of immigration has changed. Nowadays it consists mainly of refugees and a low share of labour migrants.

Employment growth has risen sharply after the financial crisis in 2009, by about 256,000 people (5.8%) between 2010 and 2015. The strong increase in employment after the financial crisis has not led to major shortages of jobseekers in the labour market and has therefore not a significant negative impact on the economy. By Swedish standards, unemployment is high despite the large increase in employment. In 2015, the unemployment rate in Sweden was 7.5%, compared to 8.7% in 2010. These figures are below the European average. The reason that the unemployment rate has not fallen to a greater extent is due to the rapid growth of labour supply, which has increased steadily recent years. From 2010 to 2015, the labour force increased by a total of about 216,000 persons (4.5%). The labour force participation rate reached 82.9% in 2015 while the employment rate<sup>1</sup> rose to 76.7%. These levels are among the highest in Europe.

The long-term employment policy focuses on measures to strengthen the supply of labour since experience shows that labour supply will have major effects on the long-run growth of employment at a time when the working-age population born in Sweden is expected to decrease in long term. During the first decade of the new century and especially after 2006, reforms were introduced for the specific purpose of increasing the labour supply. New reforms have been introduced in areas such as unemployment insurance, establish immigrants, health insurance and labour market programmes. An increase in the number of jobseekers is expected to improve matching in the labour market. During the same period, labour market policy has provided various forms of incentives to support active jobseeking.

### ***7.1.1 Large-Scale Retirement in the Swedish Labour Market***

According to population forecasts by Statistics Sweden (SCB) (2016), the native-born working-age population is expected to decrease over the period 2016–2030 while at the same time a substantial number of elderly workers will retire from the

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<sup>1</sup>Share of active population in both cases.

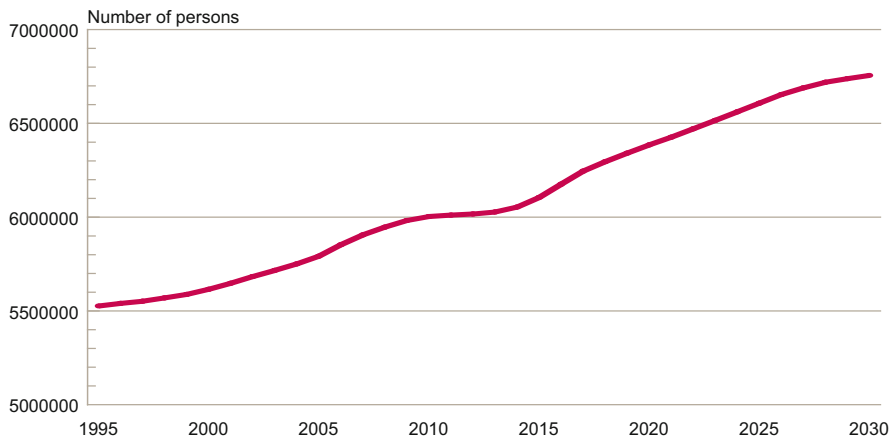
labour market. This anticipated growth in retirements will reduce the potential increase in the working-age population. If current labour market behaviour remains unchanged, the increase in labour supply can slow down up to 2030, which also will reduce the potential supply of worked hours. If this trend continues, it might in turn limit GDP growth. In addition, the generational shift will impact on different industries and regions differently. There will be a greater impact on certain parts of the labour market than on others. Signs of growing recruitment problems may become evident in the most affected sectors.

All in all, over 1,760,000 people are expected to leave the labour market due to retirement from 2016 to 2030, compared to approximately 1,590,000 retirements from 2000 to 2015 and approximately 1,400,000 from 1996 to 2010. This will hit small and medium size regions hard. At the same time these regions have a weak population trend in working ages. The challenge is to meet that outflow of labour with a sufficient inflow of new labour and maintain an effective matching between jobseekers and vacancies. However, there are measures available to try to alleviate the effects of this generational shift. There is no single solution, but rather a series of different steps that may help produce a positive outcome.

The labour force has increased over the past decades due to the rapid growth of the working-age population as well as an increasing labour force participation. These conditions will change over the next decades. The demographic impact on the labour supply will diminish due to weaker population growth during 2020s and forward. The age structure of the population will no longer have the same effect on the size of the labour force. In the long term, this means that the conditions for replacing the retiring labour force and increasing the employment rate will deteriorate significantly in certain regions. Thus, the generational shift will be a major challenge since the inflow of young persons to the labour force will not be as large as during previous decades. Future trends in the labour market depends in large extend on the level of net migration.

## **7.2 The Increasing Importance of Migrants in the Labour Market**

During the third decade of this century, the growth of the working-age population will slow down (Fig. 7.1). These changes also differ on a regional basis whereby the working-age population will grow at a slower pace in all 21 counties up until 2030 with many counties expected to experience a decline. The largest decline is expected in the counties of Norrbotten, Dalarna, Gotland and Jämtland. On the other hand, there will be an increase in the working-age population in the high populated counties as Stockholm, Västra Götaland (Gothenburg) and Skåne (Malmö). All in all, this indicates that the discrepancies between regions when it comes to tackling demographic changes are expected to grow during the period to 2030.

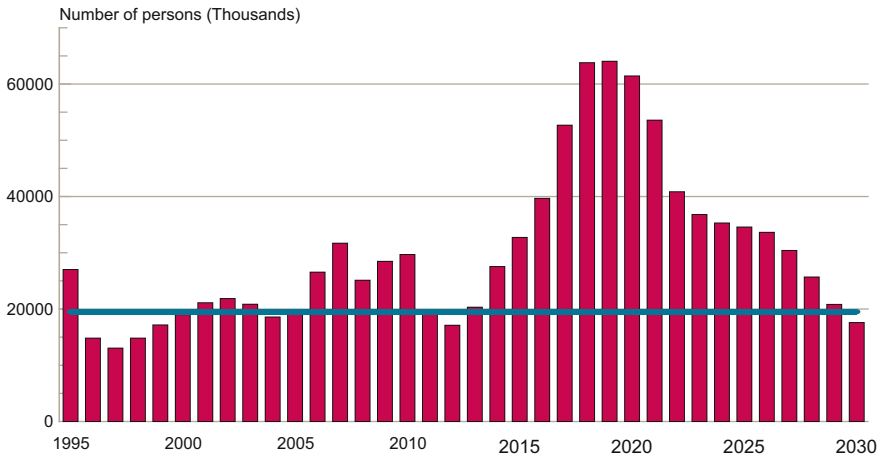


**Fig. 7.1** Sweden's working-age population (16–64 years old) (1995–2030). *Source:* Statistics Sweden. Available at: [www.scb.se/en/](http://www.scb.se/en/)

The final outcome will be determined by the size of net immigration during the period. From 2006 to 2015, net immigration to Sweden was considerably higher than the historic average, and even higher than was estimated in the population forecasts. It is always difficult to anticipate the size of net immigration in any population forecast. Even in scenarios with higher net immigration, persons of working age will still grow more slowly in many counties 2016 to 2030. If this pattern becomes a reality, it will limit the opportunities to increase labour supply and employment rates in most counties outside the three largest city regions mentioned above.

The modest population growth rate in the near future means that the underlying demographic growth of the labour supply can diminish from 2020 to 2030. After 2020, when net migration is estimated on a lower level, means limited demographic additions to the labour force. Historically, the demographic addition to the labour force due to population changes has been less than 30,000 per annum since the beginning of the 1970s. However, since 2006, the average addition has been higher, or more than 40,000 people per annum.

Regarding the period 2016–2030, indicators suggest that the demographic inflow of native-born labour will be considerably lower. This would further limit opportunities to increase the labour supply in the long term, in response to population development. In order to maintain the labour supply growth rate, labour market participation must increase within the existing population and/or net migration must maintain on higher levels.



**Fig. 7.2** Sweden's demographic effect on labour force and historical average (population aged 16–64 years old) (1995–2030). *Source:* Statistics Sweden. Available at: [www.scb.se/en/PublicEmploymentService](http://www.scb.se/en/PublicEmploymentService)

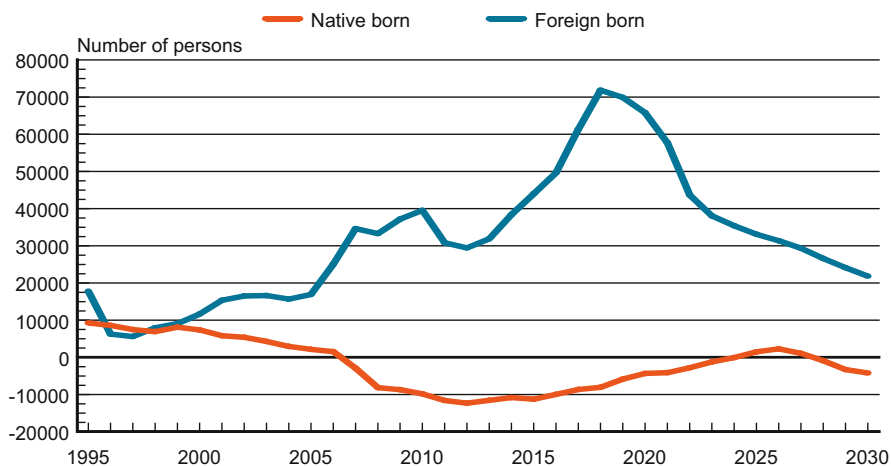
A demographic projection<sup>2</sup> (Fig. 7.2) shows that the labour force had grown on average by approximately 23,000 persons annually from 2011 to 2015.<sup>3</sup> From 2016 to 2020, the rate will increase to a little over 50,000 persons annually, based on the latest population forecast (2016) from Statistics Sweden. Thus, after 2020, the demographic contribution to the labour force will be weaker depending on an estimated lower net migration. This means that employment growth risks coming to a complete halt in many regions in 2020s.

As mentioned above, it is essential to have an annual contribution to the labour force of more than 40,000 people in order to maintain a ratio of dependency on 2015th level. On a regional basis, based on current age-related behaviour patterns and activity rates, the labour force is expected to decline in several counties in absolute terms up to 2030. Many of those counties will have limited scope to increase their labour supply through population growth. The labour supply, therefore, must in those cases mainly grow by increasing levels of participation within the existing population. In the longer term, this leads to harder conditions for improving employment rates in many regions, which in turn risks curbing regional growth.

From 2007 to 2015, the demographic contribution of persons in the labour force had been exclusively comprise foreign-born residents, totalling about 320,000 people. The number of people born in Sweden had dropped during the period, constituting a decline of about 90,000 people (Fig. 7.3). Totalling these two

<sup>2</sup>Labour market participation in 2011, retrieved from the labour survey conducted by Statistics Sweden.

<sup>3</sup>Due to changes in the population, in addition the number of persons in labour force depend on changes of labour force participation.



**Fig. 7.3** Native and foreign born in Sweden, demographic effect on labour force (aged 16–64 years old) (1995–2030). *Source:* Statistics Sweden. Available at: [www.scb.se/en/PublicEmploymentService](http://www.scb.se/en/PublicEmploymentService)

population groups, the overall contribution to the labour force has been approximately 230,000 persons, i.e. an additional 26,000 people per year on average.<sup>4</sup> In all countries the number of foreign-born in the labour force is expected to rise until 2030 because of net migration, with some regions growing over 30% over the next few years. Over the coming years, the number of native born in the labour force will only grow in urban regions such as Stockholm. In the rest of the country, the number of native born in the labour force will decline, and in several regions in northern Sweden, the decline is expected to exceed 10% from 2016 to 2030.

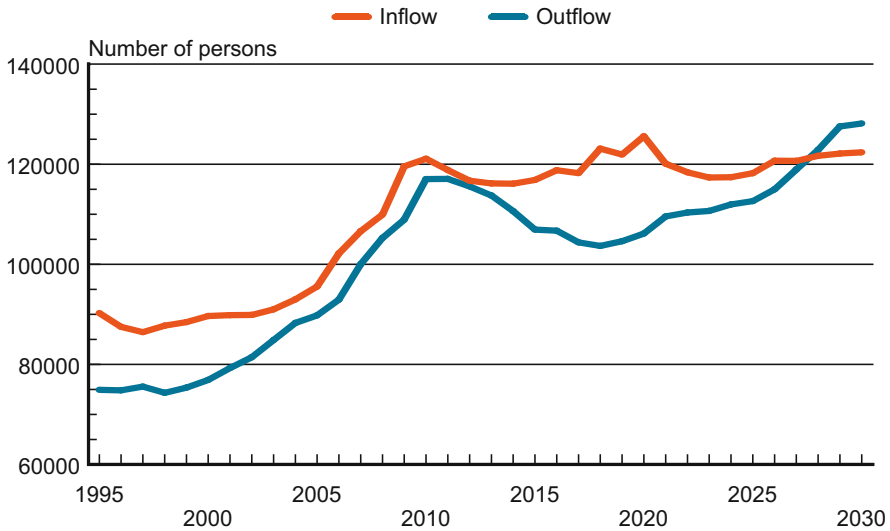
Thus, the changes to the future labour force concern the size of the contribution represented by the number of foreign born in the population, and their opportunities to enter the labour market. However, there are considerable opportunities to increase the labour market participation of several categories of foreign-born residents who are already in the country.

## 7.3 Industry and Gender Factors in Retirement

### 7.3.1 Trends in Retirement

All in all, over 525,000 people are expected to leave the labour market due to retirement from 2016 to 2020, 555,000 from 2021 to 2025 and 610,000 from 2026

<sup>4</sup>Due to changes in the population, in addition the number of persons in labour force depend on changes of labour force participation.



**Fig. 7.4** Inflow of young persons and outflow of retirees in the Swedish labour market (1995–2030). *Source:* Statistics Sweden. Available at: [www.scb.se/en/PublicEmploymentService](http://www.scb.se/en/PublicEmploymentService)

to 2030 (Fig. 7.4). In other words, there will be an increasing number of retirements during the period from 2016 until 2030. This also means that the number of youth entering the labour market will be lower than the number of elderly retirees in the workforce 2028–2030, i.e. a ratio of less than one between the incoming and outgoing labour. Previous decades have always had a ratio in excess of one.<sup>5</sup> The maintenance of a higher level of youth entrants than retirees is a fundamental condition for long-term labour force and employment growth (hours worked) as well as for achieving good economic welfare.

On a regional basis, Sweden will especially experience a large number of retirements on grounds of age at a regional/local level. There will be considerable differences between labour markets: for the country as a whole, 36.5% of the labour force will retire between 2016 and 2030. The largest proportion of retirees is expected in the counties of Norrbotten, Dalarna, Västernorrland and Jämtland where about 42% of the labour market is expected to retire during that period. An additional six counties will also see high levels of retirements on grounds of age. The exception is the county of Stockholm, where 33% of the labour force is expected to retire during the same period.

<sup>5</sup>The ratio was 1.17 from 1995 to 2000 and 1.10 from 2000 to 2005, followed by 1.06 from 2005 to 2010.

### 7.3.2 *Gender Discrepancies*

There are gender differences in the ratio between entries and retirements in the Swedish labour market. For women, there is a trend reversal in the net inflow to the labour market from 2021 when the ratio falls below one. For men, the ratio does not fall below one until 2030. This is linked to the fact that the labour market participation rate for women, particularly foreign-born women, is already at a lower level than it is for foreign-born men, coupled with the fact that women leave the labour market earlier than men.

The gap between entries and retirements among women will grow until 2030. The men will not see a corresponding gap over the next few years since labour force inflow will remain higher than the outflow up until 2030. The conclusion is that the lower ratios will primarily affect women. The contribution of young women to the labour market will be too low compared to their current labour market participation. A greater number of women can enter the labour force compared to the rate among men, which means there is an unused potential here, primarily among foreign-born women.

### 7.3.3 *Dependency Ratios*

Population growth up until 2050 has consistently been revised upwards in the latest population forecasts, which has affected the projection of dependency ratios in Sweden. The reason is that net immigration over the past few years has significantly exceeded the assumptions made in different forecasts. The diminishing contribution of the working-age population, coupled with a large increase of the non-working-age population will have consequences for dependency ratios, which is a ratio of the whole population against the number of people in work.<sup>6</sup>

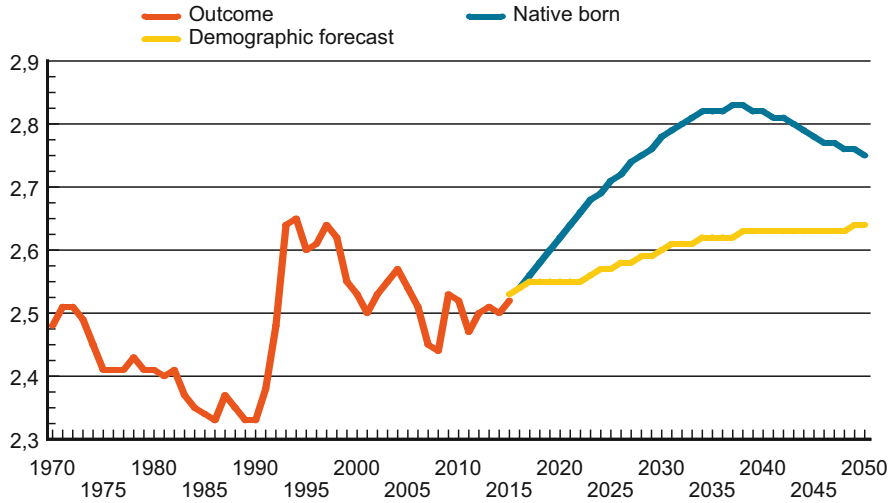
The dependency ratio from 2000 to 2010 has fluctuated at around 2.5; meaning that one person has 1.5 person dependants besides himself/herself. Over the next two decades and beyond 2030, the ratio will increase from 2.54 in 2015 up to more than 2.60. The extent to which the ratio will increase is linked to population growth as well as the contributions to the labour market. From 2016 to 2030, the employment rate needs to grow by an average of 36,000 people<sup>7</sup> per annum in order to maintain the dependency ratio at its present level (2.54).

Figure 7.5 illustrates the future changes in the dependency ratio from 2016 to 2050, with two different projections, one made as a total and another made with only native born, whereby significant differences occur. The dependency ratio will grow much faster for native born up to 2040. In the projection the dependency ratio

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<sup>6</sup>The dependency ratio is calculated by dividing the total population by the number of people in work, i.e. the employed minus absent from work.

<sup>7</sup>With the assumption that the share of absenteeism from work remains unchanged.



**Fig. 7.5** Dependency ratio in Sweden (1970–2050). *Source:* Statistics Sweden. Available at: [www.scb.se/en\\_/PublicEmploymentService](http://www.scb.se/en_/PublicEmploymentService)

rises to more than 2.8, i.e. one employed person will have almost two additional dependants. For Sweden as total the dependency ratio rises to 2.63 to end of period. This is because of a higher population growth rate in working ages due to higher net immigration.

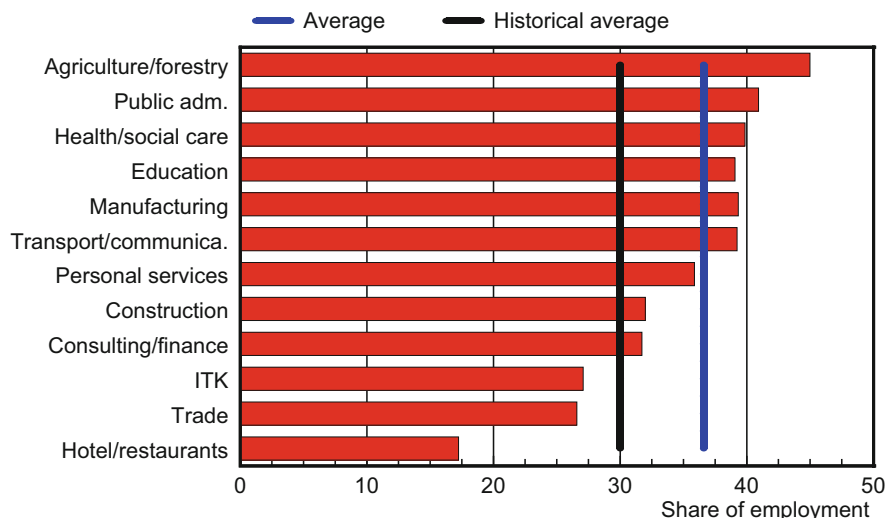
As illustrated in Fig. 7.5, future population changes will have a major and critical impact on dependency ratio developments. Dependency rate is expected to be lower than a couple of years ago, not only due to higher net immigration. There is also an additional factor that has affected the discrepancies compared to recent years. A significant higher proportion of the working-age population found employment between 2010 and 2015. It is therefore essential to maintain or increase the employment rate for the working-age population (by different measures and by increasing labour market participation). This will result in scenarios that limit the increase in the dependency ratio, in spite of an ageing population, and the subsequent additional strain on the welfare system.

### 7.3.4 The Effects of Employment Sector

#### 7.3.4.1 Agriculture and Forestry Sector

The distribution of retirees according to age varies between different industries in the Swedish labour market (Fig. 7.6). The fisheries, agricultural and forestry industries will see the highest share of retirees. These industries only constitute a small part of the Swedish labour market and employ less than 2% of total





**Fig. 7.6** Retirements by branch in Sweden, 2016–2030. *Source:* Statistics Sweden, Available at: [www.scb.se/en/\\_PublicEmploymentService](http://www.scb.se/en/_PublicEmploymentService)

employment. Nevertheless, around 45% of the 70,000 employed will retire between 2016 and 2030, corresponding to almost 30,000 persons. The share can be compared to 36.5% for the labour market as a whole, or the historical average of 30%.

Retirement on the grounds of age is almost as high within the public sector as within agriculture and forestry. From 2016 to 2030, around 40% of public sector employees will retire from the labour market. This corresponds to around 585,000 persons. Retirements is high in all areas in the public sector. Highest share in the public administration followed by health and social care with around 40% of retirees. The current level of inflow of labour to the sector would mean a huge difference between inflow and outflow amounts to all parts of public sector. If the current situation prevails, the public sector will face significant difficulties in replacing all of the retirees, as a total and in all counties. It would require a significantly higher inflow of young persons in the sector.

## 7.4 Local Case Studies

The case studies describe the situation in two local labour markets, one in Dalarna County and one in Norrbotten County. These are two of the counties that are the most affected by the generational shift in Sweden. The selected municipalities will therefore provide an appropriate reflection of local labour markets affected by the generational shift in Sweden. The first case study covers developments in three municipalities in Dalarna, which are suitable representatives for the county. Those municipalities are Mora, Älvdalen and Orsa. All three are part of the long-term

growth in the tourist industry as well as ongoing changes in other specific industries. The second case study in Norrbotten covers the demographic challenges faced by the municipalities of Kiruna and Pajala. These two municipalities are particularly interesting as manufacturing and mining as well as the public sector plays an important role in these local labour markets.

### **7.4.1 Case Study: Mora, Orsa, Älvdalen in Dalarna County**

#### **7.4.1.1 Dalarna County**

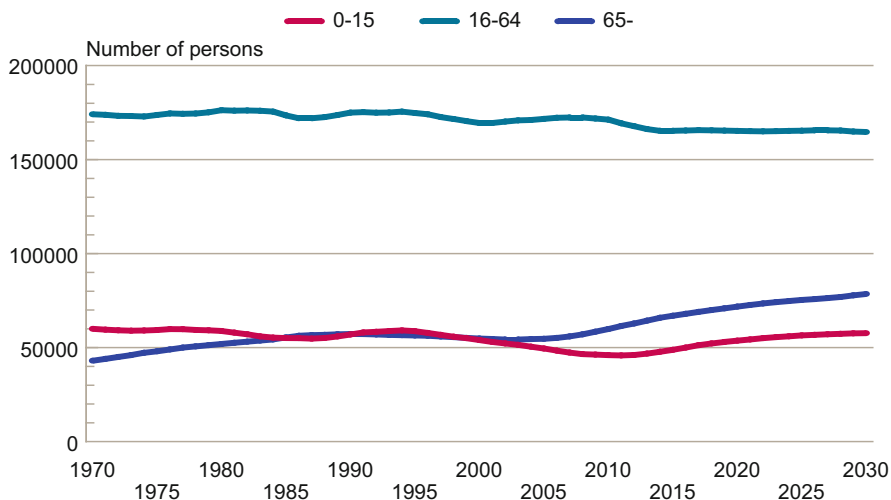
The county of Dalarna consists of 15 municipalities and in 2015, the total population in the county reached 281,000. Dalarna is one of the two counties which is the most impacted by the generational shift in the labour market. The average age in the county is high and a substantial proportion of the working-age population will be retiring on grounds of age over the next few years. From 2016 to 2030, almost 42% are expected to retire from the labour market. At the same time, there is an unfavourable population trend in the region.

Since 2000, population figures for the county have increased by 1%, or more than 3000 persons. The population under 15 years of age has fallen by 9.6%, corresponding to 5000 persons, while the working-age population between 16 and 64 has fallen by 2.5%, or by 4000, in the same period. Instead, the number of older people in the county has risen. In 2015, the number of people of 65 years of age or older was 67,000, and their number has grown by 12,000 or 22%, since 2000.

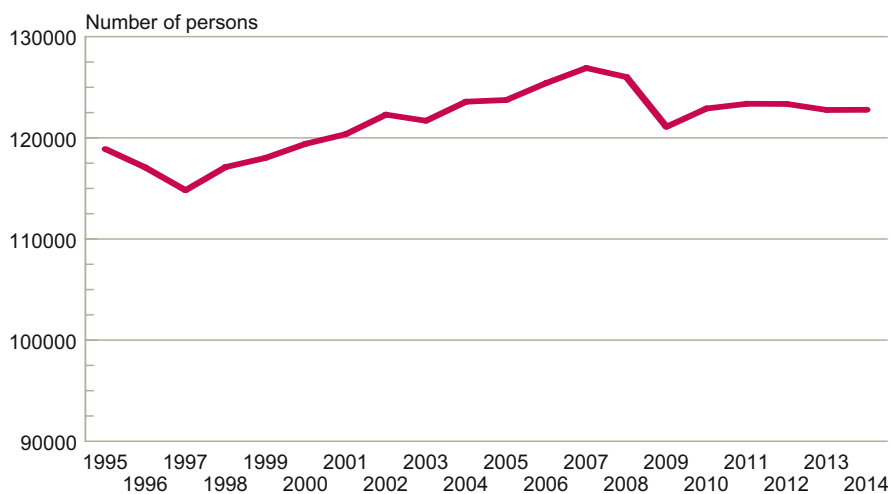
According to Statistics Sweden's population forecast, the county's population will continue to grow during the next few years and in 2030, population in the county will total a little over 300,000. Thus, the county's population is estimated to grow by 7.0%, or by 19,000 persons, up to 2030. However, there are huge differences between the age groups.

The figures for the working-age population (16–64 years old) are expected to continue to fall (Fig. 7.7). The number of persons in this age group is expected to fall by 0.4%, or 1000 people, up until 2030. However, the number of younger people in the county, i.e. people aged from 0 to 15 years, is expected to grow over the coming years. The increase is estimated at 18%, or close to 9000 persons. The strongest population growth is to be expected among those aged 65 or older, where figures will grow by 17%, or by 9000 persons, up until 2030. Among those aged 80 or older the figures will grow by 61%. In 2030, more than 25% of the county's population will be aged 65 or older, compared to just over 20% in 2000. This projection is based on the assumption that current population trends remain unchanged for the period up until 2030.

In 2015, the number of employed in the county of Dalarna was 123,000, which was equivalent to an employment rate for the county of 74%, which is higher than the national average of 73%. Employment in the county increased by 3000 since 2000 but there is a loss of 4000 jobs since the financial crises 2008/2009 (Fig. 7.8).

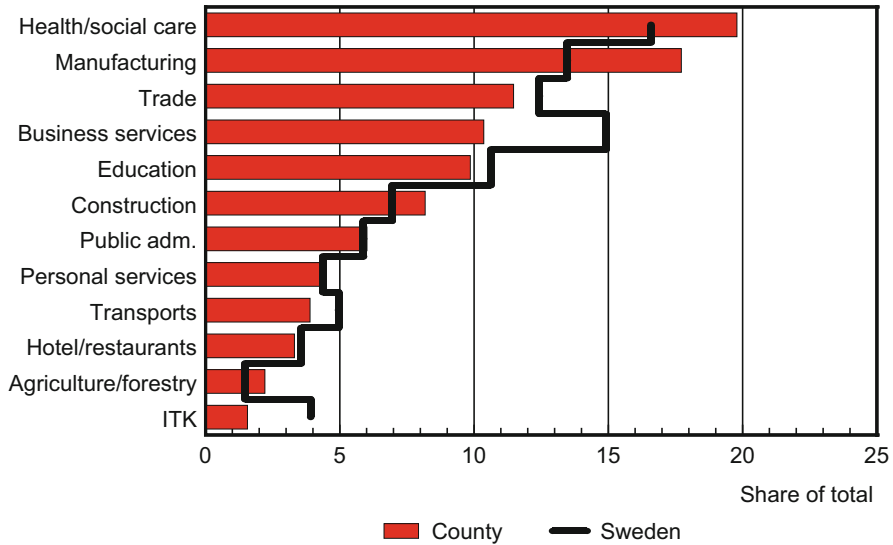


**Fig. 7.7** Population in the county of Dalarna (Sweden) (1970–2030). *Source:* Statistics Sweden. Available at: [www.scb.se/en/](http://www.scb.se/en/)



**Fig. 7.8** Number of employed (16–64 years) in the county of Dalarna (Sweden) (1995–2014). *Source:* Statistics Sweden. Available at: [www.scb.se/en/](http://www.scb.se/en/)

The manufacturing sector was particularly hard hit and the number of employees in the sector fell by 4000 since 2008. Since 2009, there has been some recovery in the labour market and employment has risen. However, employment rates in the county are about the same compared with years before the crisis. In the manufacturing sector, where employment rates fell most sharply in 2009, the rates slowly



**Fig. 7.9** Share of employment by industry sector in Dalarna compared to Sweden 2014. *Source:* Statistics Sweden. Available at: [www.scb.se/en/PublicEmploymentService](http://www.scb.se/en/PublicEmploymentService)

decreased during 2010 to 2014. The strongest employment trend since 2009 has been in hotels, restaurants, business services and forestry and agriculture.

The health and social care sector as well as manufacturing are the two primary sectors in terms of employment. These two sectors have a higher share of employment than in the nation as a whole along with the construction industry, which employs around 8%. Retail trade employed a little over 11%, making retail the third largest sector in the county (Fig. 7.9).

### 7.4.1.2 Mora, Orsa and Älvdalen

The first case study covers developments in three municipalities in the county of Dalarna, which are suitable representatives for the county. Those municipalities are Mora, Älvdalen and Orsa. They are all connected to the growth of the tourist industry as well as other specific industries in the region. They are facing considerable challenges in the near future associated with the large numbers of older people leaving the labour market together with unfavourable population trends. The municipality of Mora is the largest in terms of population. In 2015, Mora’s population was 20,000, Älvdalen’s 7000 and Orsa’s close to 7000. This means that 12% of the county’s population lived in one of these three municipalities (Table 7.1).

**Table 7.1** Mora, Älvdalen and Orsa local facts

Facts	Mora	Älvdalen	Orsa
Total population (2015)	20,101	7035	6750
Population change 2000–2015	–0.2%	–8.8%	–3.4%
Labour market participation 16–64 year olds (2014)	82.6%	81.9%	77.8%
– Domestic born	83.8%	83.8%	80.2%
– Foreign-born	67.5%	59.3%	53.6%
Employment rates 16–64 year olds (2014)	77.6%	75.3%	70.8%
– Domestic born	78.8%	74.4%	73.8%
– Foreign-born	62.7%	52.3%	43.8%
Unemployment (16–64 year olds), 2015 <sup>a</sup>	7.7%	8.3%	9.0%
– Men	8.1%	7.6%	9.2%
– Women	7.3%	9.1%	8.8%
Retirements 2016–2030 <sup>b</sup>	44%	45%	49%

Source: Statistics Sweden. Available at: [www.scb.se/en/](http://www.scb.se/en/)

<sup>a</sup>Total number registered with Arbetsförmedlingen

<sup>b</sup>Share of employed, November 2014

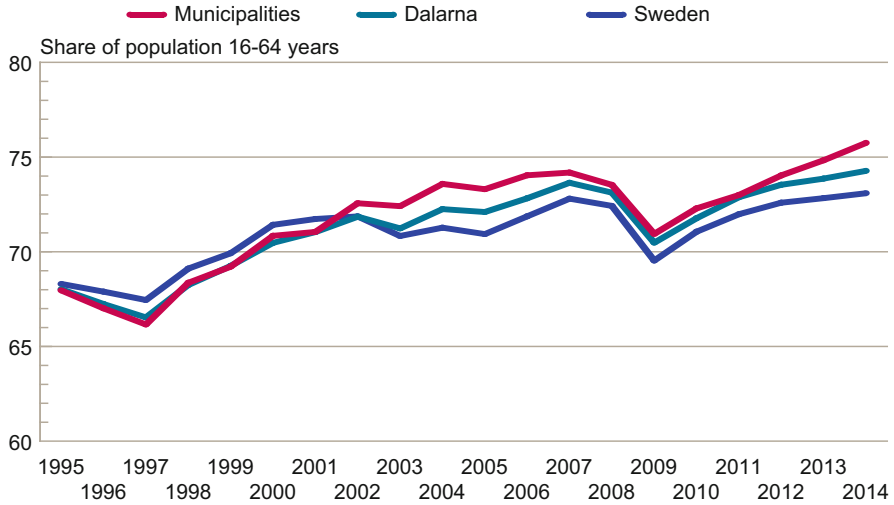
### 7.4.1.3 Differences in Employment Rates Between the Municipalities

The share of the population in employment between 16 and 64 years of age (the employment rate), is higher in Dalarna County than in Sweden as a whole. Out of the three municipalities in the case study, the employment rate is the highest in Mora, at 77.6% in 2014. In Älvdalen and Orsa, employment rates were 75.3 and 70.8% respectively. Thus, the employment rate is seven percentage points higher in Mora than in Orsa. The employment rate is higher among men than women, except in Älvdalen, where the share of employed women is higher.

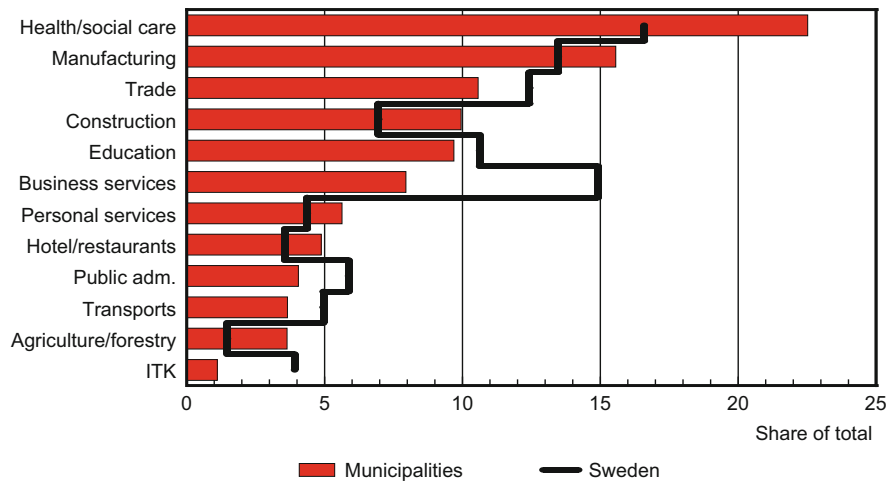
In 2009, employment rates fell across all municipalities (Fig. 7.10). The rates have risen subsequently since then, due to the fact that the number of persons of working age has fallen (and not because the number of employed in the municipalities has increased). Since 2009, employment rates have risen more rapidly in Mora and Älvdalen than they have in Orsa. The employment rates in the municipalities are in 2014 higher than before the financial crisis.

### 7.4.1.4 The Importance of Tourism

The industry structure is similar in all three municipalities, but is different in many aspects from the industry structure in the country as a whole (Fig. 7.11). The region hosts many small businesses in the manufacturing sector as well as in the tourist industry. Especially in Mora, many work in manufacturing. A large proportion of the employed works in the health and social care sector. According to the estimates from representatives of the municipalities, the tourist industry has the highest potential for employment growth in the future. Data also confirm that the tourist



**Fig. 7.10** Employment rates in Mora, Orsa and Älvdalen (1995–2014). *Source:* Statistics Sweden. Available at: [www.scb.se/en/PublicEmploymentService](http://www.scb.se/en/PublicEmploymentService)



**Fig. 7.11** Combined local study areas: employment by branch compared to Sweden. *Source:* Statistics Sweden, Available at: [www.scb.se/en/PublicEmploymentService](http://www.scb.se/en/PublicEmploymentService)

industry is expanding and representatives from the municipalities expect that it will continue to do so over the next five to ten years, which also will have a positive impact on other sectors such as transport, retail trade, and hotels and restaurants. The transport sector is expected to see a positive effect from the growth of the forestry industry as well, which is expected to continue to be important for industry in the whole region, even if the number of people employed by it remains low.

Representatives from the municipalities estimate that aggregate employment will increase in the region over the next 5–10 years. In order to meet this goal, one of the most important challenges will be to increase the labour force and attract a growing number of graduates to the region.

#### **7.4.1.5 The Growing Population Share of the Elderly**

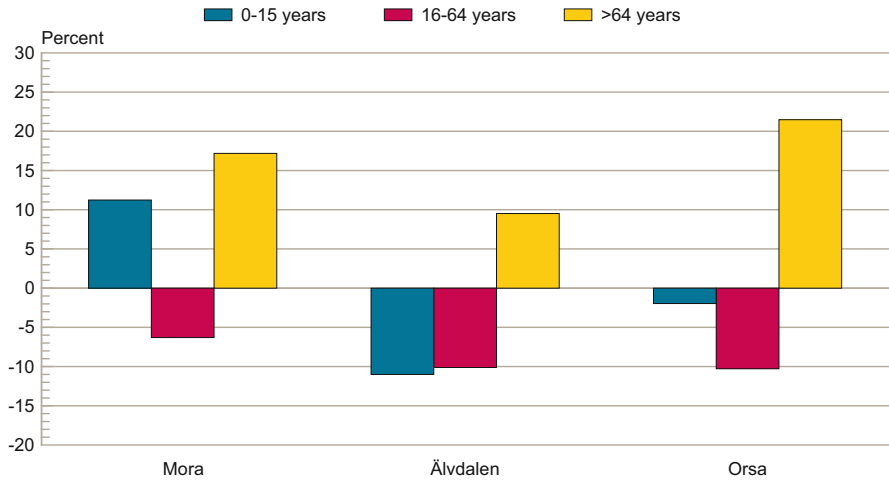
One aspect common to all three municipalities in the case study is a population decline over the past few years. From 2000 to 2015, the largest population decline, 13%, occurred in the municipality of Älvdalen 16–64 of age. In Mora and Orsa, populations declined by 6% and 3% respectively. These figures may be explained in all three municipalities by a declining net birth rate and a long term net outward migration. The fertility rate in the region has been at a level just over 1.9% in recent years, about the same as the national level. Net migration differs quite widely between years, but in recent years it has been positive.

The 0–15 age group accounted for the largest decline in relative population share. However, there is a net inflow of people over the age of 25, many whom move to the region due to family connections or the proximity to beautiful natural surroundings and an inflow of people in these age groups due to refugee immigration. The population aged 65 and above has grown in all three municipalities. This means that the elderly constitute a growing share of the population.

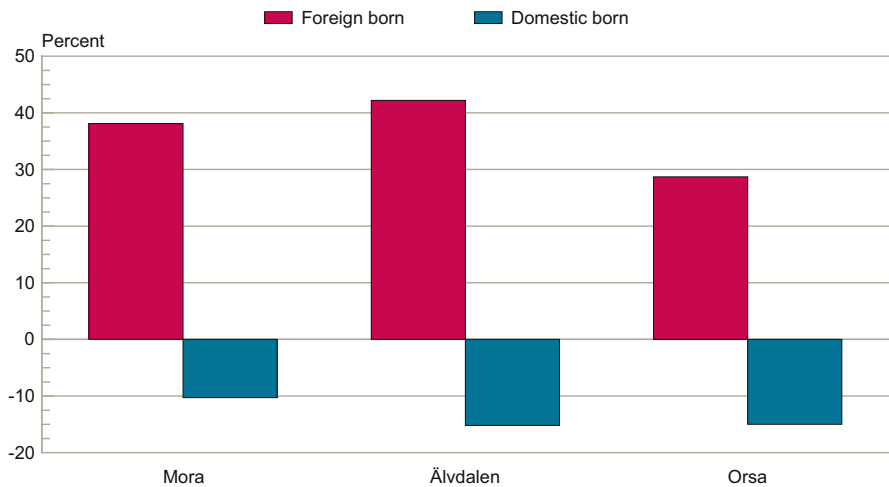
According to the population forecast up until 2030 from Statistics Sweden, the composition of the population will change adversely in all three municipalities. The number of people of working age will fall by 7% from 2015 to 2030. The number of people in the 0–15 year cohort will increase slightly up until 2030 (Fig. 7.12). The largest relative increase in population will be seen among people 65 years or older. In both Mora and Orsa, the number of people 65 years or older will grow about 20% until 2030. In Älvdalen, the increase will be 10%. The increase in the over 80 age group is estimated as high as 60% in the region. It is important to stress that all of these projected population trends are dependent on current population patterns remaining constant, i.e. the current trends remain unchanged.

#### **7.4.1.6 Population Growth Through Immigration**

The entire net inflow of people of working age for the next few years consists of immigrants (Fig. 7.13). In both Mora and Älvdalen, the number of foreign born will grow around 40% until 2030, based on the assumption that these municipalities maintain their current share of net immigration. In Orsa, the increase will be less than 30%. Over the coming years up until 2019, the number of immigrants of working age in the three municipalities will grow at a higher level than recent years. After that, the rate of increase will slow down due to the assumption that immigration as a whole will be lower according to the population forecast.



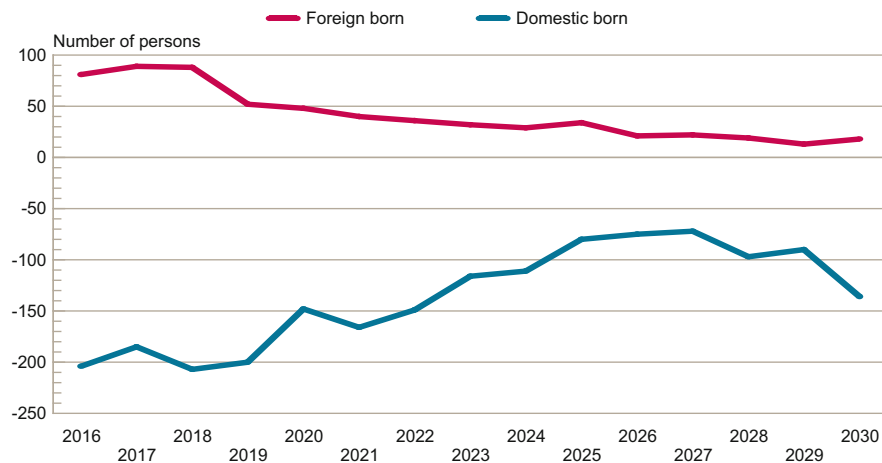
**Fig. 7.12** Population projections 2015–2030 by age group: Mora, Älvdalen and Orsa. *Source:* Statistics Sweden. Available at: [www.scb.se/en/](http://www.scb.se/en/)



**Fig. 7.13** Projected change of the working-age population (16–64 years old): Mora, Älvdalen and Orsa (2015–2030). *Source:* Statistics Sweden. Available at: [www.scb.se/en/](http://www.scb.se/en/)

The number of domestic born people in the labour force will, however, fall by around 15% as a result of demographic changes over the period up until 2030 (Fig. 7.14). Thus, there is significant potential among the immigrant population, which is expected to rise over the next few years. However, unemployment among the foreign born is quite high in all three municipalities and there is room to reduce unemployment by making better use of existing labour resources in this group.





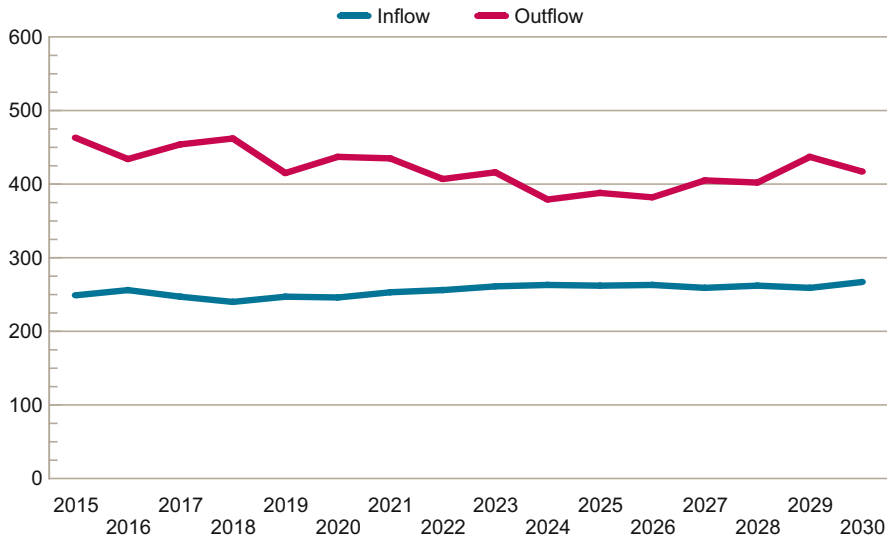
**Fig. 7.14** Combined local study areas: domestic and foreign born in the labour force, demographic changes 2016–2030 (ages 16–64). *Source:* Statistics Sweden. Available at: [www.scb.se/en](http://www.scb.se/en)

There is room in the municipalities to increase labour market participation among immigrants, not least among non-European women. Labour market participation among foreign-born residents is over ten percentage points lower than for those born in Sweden in all three municipalities. Over the next few years, the demographic inflow of labour will consist exclusively of immigrants, while the share of the population born in Sweden will fall during the period up until 2030. The inflow of immigrant labour would increase further if the gap between labour market participation rates for foreign- and domestic born residents was reduced.

#### 7.4.1.7 Higher Level of Retirees Than Youth Entries

Up until 2030, the ratio between inflow and outflow to and from the labour market will be less than one, 0.61, i.e. the number of people retiring due to age will be higher than the number of youth (16–30 years of age) who are expected to enter the labour market. This is an indication that the long-term growth potential of the labour supply is being curtailed.

All in all, 6700 people will retire on grounds of age in the three municipalities while only 4000 young people are expected to enter the labour market (Fig. 7.15). This shortfall of about 3000 people between the inflow of young entrants and the outflow of retirees is about twice the current inflow of labour. If this scenario comes about, both the labour force and employment will suffer long-term decline. There will have to be a change in this trend, otherwise the region will be unable to maintain economic growth and an increasing number of employed. More new immigrants can reduce the gap a bit but the inflow of labour would have to be at



**Fig. 7.15** Combined local study areas: inflow of young persons and outflow of retirements. *Source:* Statistics Sweden. Available at: [www.scb.se/en/](http://www.scb.se/en/)

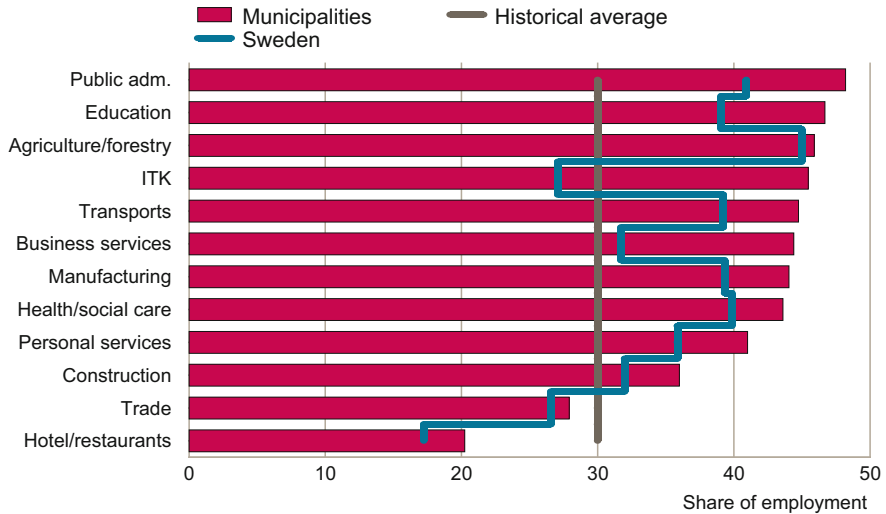
least at the same level as the outflow to maintain the current level of employment in the long term.

#### 7.4.1.8 High Share of Retirees in the Public Sector: Labour Shortages in Some Professions

The average age of private sector employees is high in all three municipalities. Mora, Orsa and Älvdalen also have a high share of persons working in the public sector.

Approximately 45% of all employees in the three municipalities are expected to retire on grounds of age through 2030. That is significantly higher than the historical figure of 30%. The share of retirees across different sectors in the three municipalities will be consistently higher than in most sectors in the country as a whole, particularly in the areas of public administration, transport, and health and social care (Fig. 7.16).

According to representatives from the municipalities, it will be a considerable challenge to replace all those retiring on grounds of age in the health and social care sector. It may be necessary to recruit labour abroad. There is an insufficient interest in these educational programmes among young people to make up for the retirements. The major challenge is to raise interest in educational programmes and work in the healthcare sector. This will become even more essential once the baby boomers born in the 1940s start requiring healthcare on a large scale. The three municipalities collaborate in recruiting people to work in their own core services.



**Fig. 7.16** Combined local study areas: retirements by industry sector 2016–2030. *Source:* Statistics Sweden. Available at: [www.scb.se/en/PublicEmploymentService](http://www.scb.se/en/PublicEmploymentService)

They also collaborate in the area of municipal IT operations. These collaborations reduce the costs for individual municipalities and facilitate recruitment.

The municipalities fear labour shortages in the following sectors, both in the short and in the long term:

- healthcare
- care for the elderly and disabled
- education
- technological consultancy/engineering.

#### 7.4.1.9 Municipal Strategies for Increasing the Labour Supply

The municipalities of Mora, Orsa and Älvdalen are all working actively and in collaboration to introduce measures to facilitate future business developments. The municipalities argue that it is important to continue developing infrastructure in order to attract new business and labour to the region. It is also important to expand the broadband networks in the region.

They also stress the importance of providing good guidance counselling for schoolchildren. The inflow of young people into the local labour market will not be sufficient to make up for all the elderly retirees. It is important that young people entering the labour market have an education that makes them employable. The municipalities foresee difficulties in recruiting labour in certain sectors that require university degrees and they are actively working with the university in the region in order to influence both the content and direction of its programmes. The

municipalities are also planning a project in collaboration with Swedish Public Employment Service and the Swedish Social Insurance Agency with the aim of mobilising those who are furthest from the labour market and who currently constitute an un-utilised labour resource.

In order to attract people to the region, the municipalities are marketing themselves at trade fairs and conventions. The main attraction of the region is its proximity to wildlife and nature. There is also plenty of undeveloped land, for example in attractive places near lakes and mountains, for housing that might attract valuable labour to the region.

All in all, the municipalities are actively working on facilitating future business development. Some of the measures that aim to increase labour supply and facilitate future recruitment are:

- Joint skill supply project between municipalities in order to facilitate the recruitment of important labour in the region.
- Providing attractive plots for new construction in the region.
- Expanding the fibre optic network in the region, improving IT communication.
- Receiving newcomers to the region—labour market unit and a contact person for every family/person moving there.
- Collaborating between municipalities on public services—IT issues, salaries, water supply, waste management, skill supply in municipality services.
- Co-ordinating between the Swedish Public Employment Service and the Swedish Social Insurance and county interventions for people/labour with special support needs.

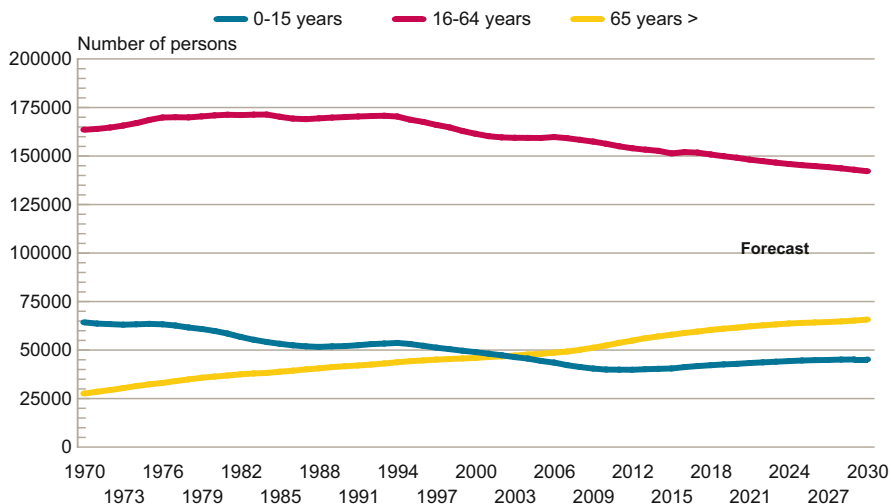
## ***7.4.2 Case Study: Kiruna and Pajala in Norrbotten County***

### **7.4.2.1 Norrbotten County**

Norrbotten is one of the counties that suffers the most from the generational shift in the labour market. The average age of the labour force in the county is high and many people will be retiring from the labour market over the next few years. At the same time, the number of younger members of the population has been falling for some time due to people moving to metropolitan areas, which has led to an unfavourable population pyramid.

The county of Norrbotten is the largest county in Sweden in terms of surface area and covers close to one quarter of Sweden. Norrbotten is one of the counties with the highest rates of population decline in long term. Year 2015 the population has been closed to 250,000.

The working-age population has declined by 5.8% since 2000, or 9000 persons, while persons over the age of 65 have increased by 25 % during the same period. The latter now constitute more than 23% of the population. The number of persons over the age of 80 has increased by 30% since 2000.



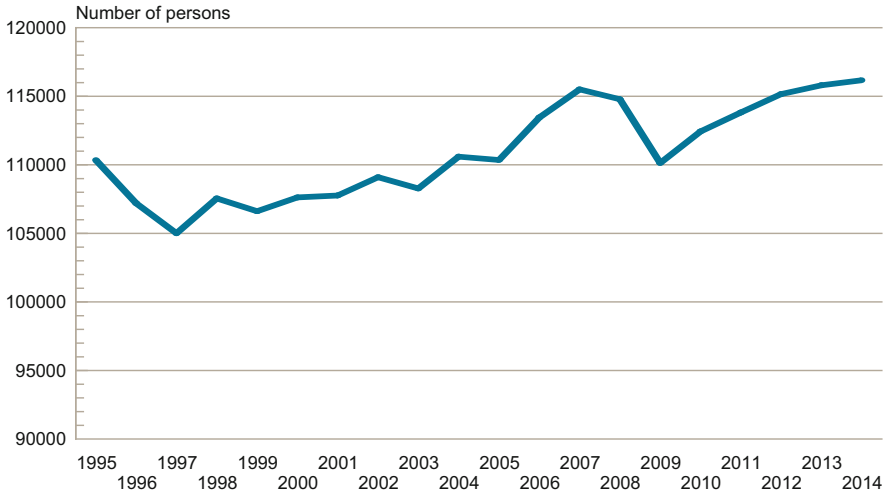
**Fig. 7.17** Population in the county of Norrbotten by age groups. *Source:* Statistics Sweden. Available at: [www.scb.se/en/](http://www.scb.se/en/)

According to Statistics Sweden's population forecast, the population will continue to be about 250,000 the coming years up to 2030. In particular, Statistics Sweden estimates a severe decline among people of working age. This group is estimated to fall by another 6%, or 9000. By 2030, the working-age population will total 142,000.

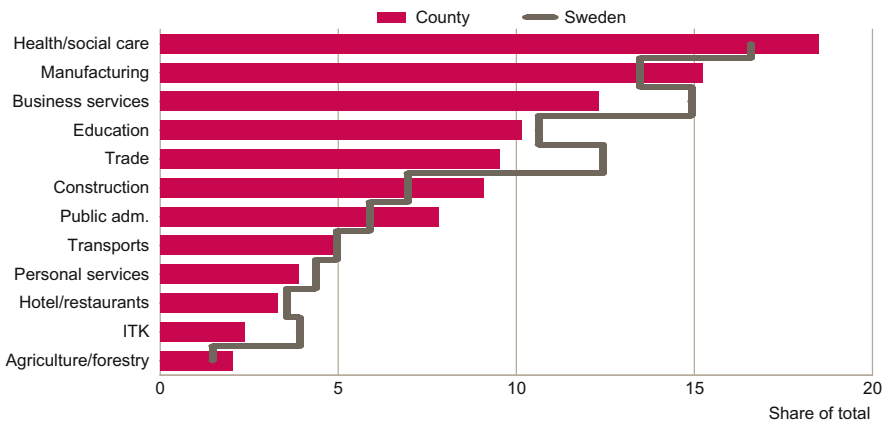
The number of persons between 0 and 15 years of age is estimated to rise slightly over the next few years. However, the most significant population growth will occur among people aged 65 or older, with an estimated increase of 13.5%, or 8000. By 2030, this group is estimated to comprise 66,000 persons. This means that in 2030, more than one quarter of the population in the county will be 65 years or older. This projection for the different age groups assumes that the current population pattern is constant up until 2030, i.e. the current trends remain unchanged (Fig. 7.17).

The labour market trends were positive in 2010 and 2014, which is largely attributable to the expansion of the mining industry. The number of people in employment (16–64 years of age) in the county was 116,000 in 2014. The employment rate was 76%, which is somewhat higher than the national average (Fig. 7.18).

In the county of Norrbotten, close to 20% of employees work in health and social care and more than 15% work in manufacturing and mining. Other large sectors in the county are education, retail trade, business services and construction, each of which employ around 10% of all employees in the county. Construction and business services, hotel, restaurants as well as agriculture and forestry have seen the highest growth in terms of the number of employees over the past few years. Manufacturing, mining, construction, health and social care employ a higher share of the labour force than in the country as a whole (Fig. 7.19).



**Fig. 7.18** Number of employed (16–64 years) in the county of Norrbotten. *Source:* Statistics Sweden. Available at: [www.scb.se/en/](http://www.scb.se/en/)



**Fig. 7.19** Employment by industry sector in Norrbotten and Sweden. *Source:* Statistics Sweden. Available at: [www.scb.se/en\\_/PublicEmploymentServices](http://www.scb.se/en_/PublicEmploymentServices)

### 7.4.2.2 Kiruna and Pajala

Local case studies in the municipalities of Kiruna and Pajala, in the county of Norrbotten from 2015 to 2030, are particularly interesting, as manufacturing and mining plays a large role in both municipalities, competing with other sectors, such as public sector, for the available labour. Kiruna has been a mining town since the end of the 19th century and next to the municipality, the mining company is the largest employer in Kiruna.

**Table 7.2** Kiruna and Pajala local facts

Facts	Kiruna	Pajala
Total population (2015)	23,178	6193
Population change 2000–2015	–4.7%	–17.2%
Labour market participation 16–64 year olds (2014)	86.1%	83.0%
– Domestic born	87.4%	85.0%
– Foreign-born	74.5%	68.3%
Employment rates 16–64 year olds (2014)	82.6%	78.5%
– Domestic born	84.5%	80.2%
– Foreign-born	67.0%	68.0%
Unemployment (16–64 years), 2015 <sup>a</sup>	4.5%	9.3%
– Men	4.5%	10.7%
– Women	4.6%	7.4%
Retirements 2016–2030 <sup>b</sup>	41%	44%

Source: Statistics Sweden. Available at: [www.scb.se/en/](http://www.scb.se/en/)

<sup>a</sup>Total number registered with *Arbetsförmedlingen*

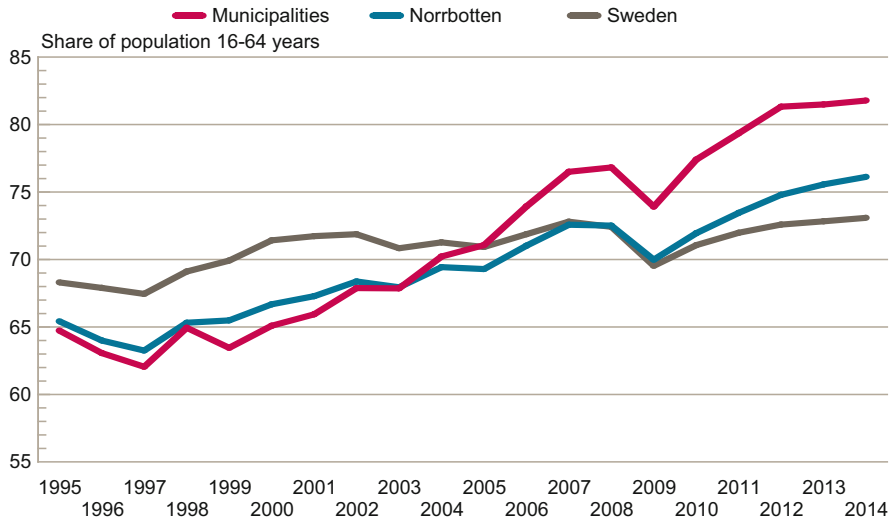
<sup>b</sup>Share of employed, November 2014

The municipality of Kiruna has around 23,000 inhabitants and Pajala a little over 6000. Both municipalities have seen a decline in population over the past few years. In Pajala, the population fell by over 17% from 2000 to 2015, while the decline in Kiruna for that period was closed to 5%. A falling net birth rate and long term negative net migration are the principal explanation of this negative trend. The fertility rate in the region has been around 1.9% in recent years, which is roughly the same as in Sweden as a whole. Net migration in Pajala, which has been negative for many years, has been reversed some in recent years. There are also better signs regarding net migration in Kiruna. The number of elderly people leaving the labour force in Kiruna and Pajala is also expected to be substantial over the coming years (Table 7.2).

#### 7.4.2.3 Employment Rates in Kiruna Close to the Highest in the Country

Employment rates in Kiruna are among the highest in the country. Over 82% of people aged 16–64 were in employment in 2015, which is high compared with other municipalities. In Pajala, the employment rate was 78.5%. Compared to the national average, the employment rate in both municipalities is high among all age groups, especially among the youth (19–34 years of age). It is also high among women, not least in Kiruna.

In both Kiruna and Pajala, employment rates have been rising over the past few years (Fig. 7.20), largely due to the expansion of mining throughout the region but also connected to a decreasing number of population in working ages. This has also had a positive impact on other sectors. Since 2000, the employment rate in Pajala has increased by more than 20 percentage points and in Kiruna, by more than



**Fig. 7.20** Employment rates in Kiruna and Pajala. *Source:* Statistics Sweden. Available at: [www.scb.se/en/PublicEmploymentService](http://www.scb.se/en/PublicEmploymentService)

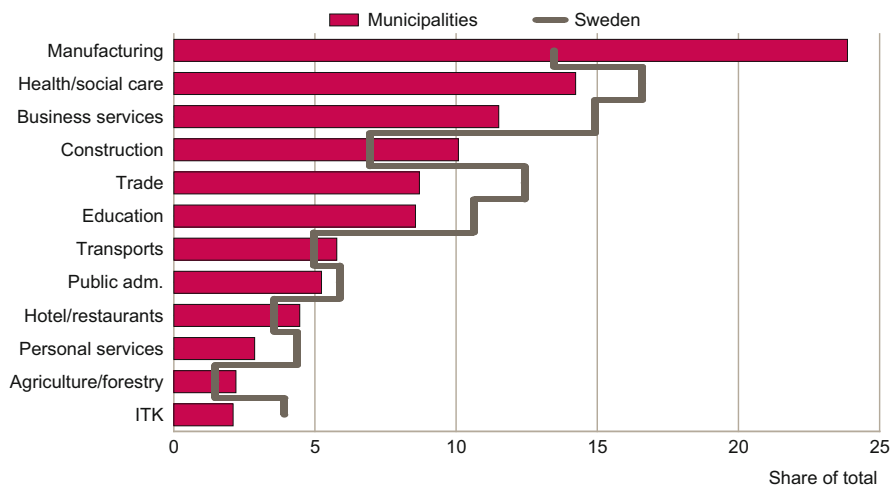
6 percentage points. The rise is more or less equal for both men and women. The higher employment rate is due to an increase in the number of people in employment over the past few years. However, there is also a demographic effect where a decline in the number of persons of working age has pushed the employment rate upwards.

#### 7.4.2.4 Municipal Sector and Mining

In Kiruna, about 20% of all employees work in the public sector. In addition, there are a significant number of persons who, directly or indirectly, are dependent on the mining industry. Just over 10% work in health and social care. As in Kiruna, the largest employer in Pajala is the public sector, with an employment share of 40%. A large proportion of public sector employees work in health and social care and education (Fig. 7.21).

Representatives from both municipalities estimate that the tourist industry will continue to expand in the region. Both Pajala and Kiruna forecast that the construction industry will employ more people in the future as the need for new housing will continue to rise. The housing shortage is currently a significant problem. Tourism linked to the Sami culture, innovative buildings and adventure tourism in the mountain region is significant, above all in Kiruna. This sector is expected to grow in the future. The region also has extensive plans for space tourism linked to the space research centre in the area.





**Fig. 7.21** Employment by industry sector in Kiruna and Pajala compared to Sweden. *Source:* Statistics Sweden. Available at: [www.scb.se/en/PublicEmploymentService](http://www.scb.se/en/PublicEmploymentService)

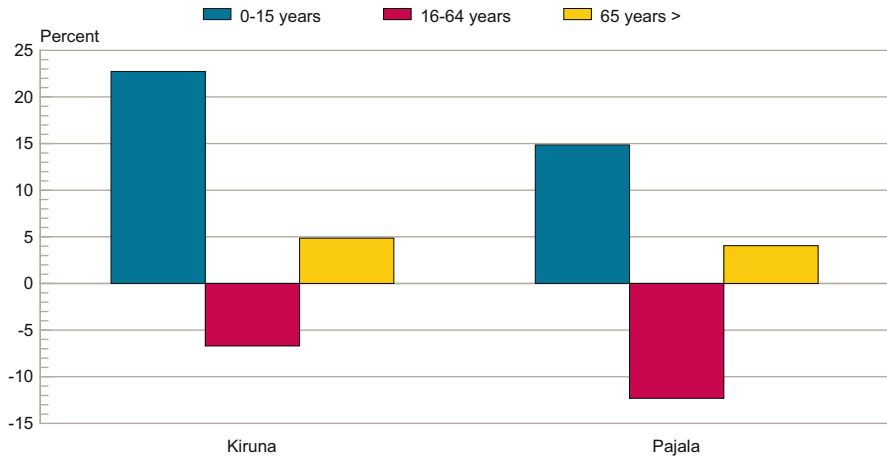
#### 7.4.2.5 Continued Unfavourable Population Composition

In both Kiruna and Pajala, the number of people of working age has fallen sharply over the past few years. From 2000 to 2015, the working-age population declined by 23% in Pajala and by 7% in Kiruna. In the same period, the 0–15 year-old age group fell by close to 30% in Pajala and by almost 20% in Kiruna.

While the number of people in the working-age population has fallen dramatically in both municipalities, the population aged 65 or above remained stable in Pajala but increased by 24% in Kiruna. This means that the share of this age group has grown steadily over the past few years and currently constitutes 33% in Pajala and 21% in Kiruna. The number of persons above 80 years of age is expected to rise by about 30% up to 2030 in the two municipalities, and higher than Sweden as a whole.

Statistics Sweden estimates that the populations in Pajala will continue to decline up until 2030 and estimate only small changes in Kiruna. This is an outcome of a number of parameters and based on previously observed population changes in the municipalities. The population trend in Kiruna is mainly attributable to the growing demand for labour in the mining industry.

It is too early to predict the final outcome. Whatever the case, the population composition will continue to be severely imbalanced (Fig. 7.22). As regards the population trend for the different age groups, it is anticipated that the 0–15 year-old age group will increase slightly in Kiruna and in Pajala. At the same time, the number of people over 65 years of age will continue to increase. Thus, an unfavourable population composition is forecast for both municipalities over the coming years.



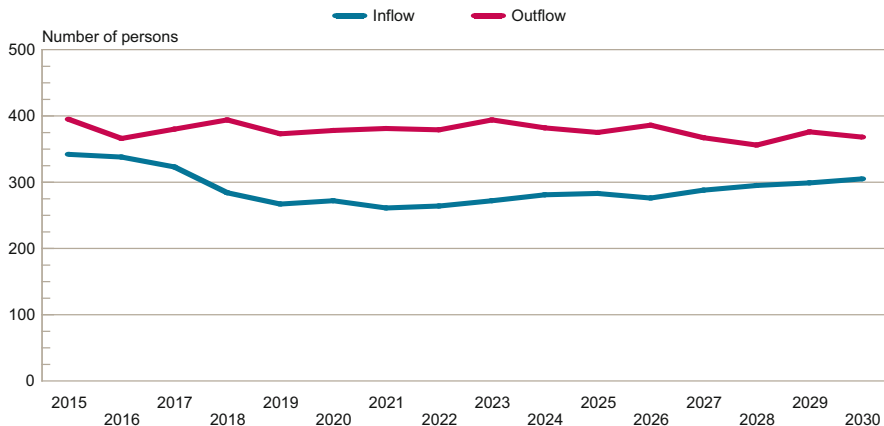
**Fig. 7.22** Population projection per age group for Kiruna and Pajala. *Source:* Statistics Sweden. Available at: [www.scb.se/en/](http://www.scb.se/en/)

#### 7.4.2.6 Large Numbers of Elderly Retirees Will Leave the Labour Market

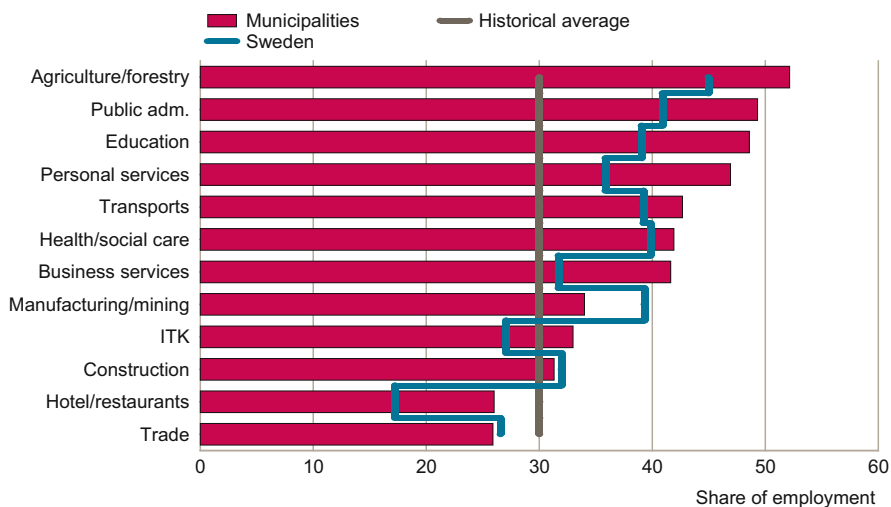
From 2015 to 2030, the ratio between the inflow and outflow to and from the labour market will be significantly less than one, i.e. the number of people retiring on grounds of age will be higher than the number of young people entering the labour market. Close to 4700 young people will enter the labour market in both municipalities between 2015 and 2030, while close to 6100 will leave it (Fig. 7.23). The ratio of 0.77 is low by comparison with other regions in the country.

If this imbalance remains over a longer period, there will be an adverse effect on both the growth of the labour force and the level of employment. The region can in worst case see a decline in these variables over the long term. This trend will have to be broken in the coming years. The inflow of labour will have to be at least at the same level as the outflow to maintain current levels of employment. The net flow is particularly imbalanced in the municipality of Pajala since the number of retirements in the public sector alone, far exceeds the number of young entrants into the labour market. There will also be a large number of elderly retirees in other sectors. The municipality is obviously facing considerable difficulties.

The share of elderly retirees is higher in Pajala than in Kiruna, 44% and 41% of employees respectively are expected to retire up to 2030. Figure 7.24 illustrates the retirement figures across several sectors in both municipalities. The share of elderly retirees in Pajala and Kiruna is higher for several number of sectors compared to the country as a whole and is accordingly significantly higher than the historical average. In both Kiruna and Pajala, the number of retirees will be particularly large in the public sector. Representatives from the municipalities are especially concerned about how to solve the problem of covering future labour demands in the health and social care sector. Health and social care has limited opportunities to



**Fig. 7.23** Inflow of young persons and outflow of retirements in Kiruna and Pajala. *Source:* Statistics Sweden. Available at: [www.scb.se/en/PublicEmploymentService](http://www.scb.se/en/PublicEmploymentService)



**Fig. 7.24** Retirements by industry sector in Kiruna and Pajala. *Source:* Statistics Sweden. Available at: [www.scb.se/en/PublicEmploymentService](http://www.scb.se/en/PublicEmploymentService)

compete salary-wise with the mining industry, which making recruitment difficulties in the future. The municipalities are actively working on making both professions and workplaces in the health and social care sector more attractive. One such example is a project in Pajala that aims to turn part-time employment within the health and social care sector into full-time employment. Both municipalities also recognise that there is a risk of future problems in recruiting engineers and other highly skilled specialists such as physicians.

The municipalities fear labour shortages in the following sectors, both in the short and in the long term:

- health and social care
- care for the elderly and disabled
- technological consultancy/engineering
- construction.

#### **7.4.2.7 Municipal Strategies for Increasing Labour Supply**

Collaboration between stakeholders is an important part of development for all industries in the region. Pajala has a Labour Market Council on which several stakeholders are represented. It manages important issues related to business development in the municipality. As mentioned, Pajala has a vision to increase the population by 2020. Linked to that vision, strategies for various municipal policy areas are essential, such as culture, sports and leisure, housing, etc. Kiruna is in the process of establishing a similar labour market council.

The municipalities collaborate on planning education, which is strategically important for business development and for the primary undertakings of the municipality. They operate educational programmes in collaboration with other municipalities in the north of Sweden, primarily programmes at post-secondary level. Collaboration between the municipalities makes it easier to achieve the requisite education volumes and facilitates the recruitment of suitable education providers in the education system.

Underutilised labour resources can be found among recently arrived immigrants. According to representatives from the municipalities, integration has worked very well, and one important part of that integration link is to reach a high quality of courses in the Swedish language. Currently, there is a low level of labour immigration, although it is estimated to rise in the future. The labour that is being recruited from other countries mainly consists of healthcare specialists. One issue that inhibits recruitment from other countries is the housing shortage in the municipalities.

In order to meet the future labour demands and increase employment in the long term, it is important to have adequate vocational training programmes.<sup>8</sup> Another measure is to help family members of new employees to find suitable employment in the local labour market. One problem in this area, as mentioned above, is that the demand for housing far outstrips the supply. Housing queues are consequently very long. The municipalities are conducting an ongoing programme in housing investment. However, the expansion of this programme is limited by the lack of resources in the municipal budgets.

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<sup>8</sup>For example, education planned by the Swedish National Agency for Higher Vocational Education.

The municipalities strive to maintain a high level of quality in their core areas of expenditure, particularly health and social care and education. It is considered essential to offer inhabitants high quality in those areas in order to make the area attractive for people to stay in the region. In addition, it acts as an incentive for people to move to the region. Culture and leisure are also important factors that attract people to the region. The municipalities are investing in theatre, music, literature, the natural environment and a range of sporting facilities.

## **7.5 Actions to Alleviate the Consequences of the Generational Shift**

### ***7.5.1 Policies to Stimulate Labour Supply***

All in all, over 1,760,000 people are expected to leave the labour market due to retirement from 2016 to 2030, compared to approximately 1,590,000 retirements from 2000 to 2015 and approximately 1,400,000 from 1995 to 2010. This will hit small and medium size regions hard. At the same time these regions have a weak population trend in working ages. However, there are measures available to try to alleviate the effects of this generation shift. There is no single solution, but rather a series of different steps that may help produce a positive outcome (Long term survey 2011 and 2015). In the following, we will consider a number of policy measures that could lead to a more efficient utilisation of existing labour resources, national and local.<sup>9</sup> Measures to increase population and labour supply in the long term will also be examined, with most of these measures linked to active policies on regional and local levels (Public Employment Service 2004, 2009, 2010).

### ***7.5.2 More Efficient Utilisation of Existing Labour Resources***

Last 10 years economic policy in Sweden has focused on increasing labour supply. New reforms have been introduced, such as changes to the unemployment insurance system, the health insurance system<sup>10</sup> and a new labour market policy. An

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<sup>9</sup>Sweden has a national labour market policy.

<sup>10</sup>The National Social Health Insurance Agency introduced new rules in 2010, to test people able to work after a period of 3 months in the insurance system. The responsibility for this assessment lays with the Public Employment Service. In order to accommodate the needs of people whose entitlement to sickness benefits had expired, the Employment Policy Programme for Working Life Introduction was introduced on 1 January 2010. Its aim was to offer participants individualised labour market measures that determined the need for support during a transition to work. The Working Life Introduction programme lasted for a maximum of 3 months.

Earned Income Tax Credit has also been introduced. The emphasis throughout has been on the need to improve incentives for jobseeking and participation in the labour market.

An increased supply of labour is also expected to contribute to an improvement in matching in the labour market. In addition to structural reforms, a number of temporary measures were introduced in connection with the financial crisis of 2008 and 2009, in order to alleviate the negative effects of the recession. The focus of these emergency measures was to reduce the impact of the fall in the employment rate, avoid long-term, high-level unemployment and maintain participation in the labour force. Labour policy has included a significantly larger element of incentives to support active jobseeking, primarily through changes in the unemployment insurance system. One of the effects of these changes has been to improve the matching process in the labour market.

The policy's main focus on stimulating labour supply has also had a substantial impact. The labour force has grown steadily last 10 years and significantly much more than during previous comparable economic periods (Ministry of Employment, Prop 2006, 2012). The number of persons in the labour force has risen in many different groups over the past few years, for example among citizens born abroad. In international terms, Sweden has a high rate of labour market participation, among the highest in Europe. In spite of this, there is further potential for raising the labour supply to even higher levels among various parts of the population. In order to facilitate a continued supply of labour in the future, it is essential to harness the available labour resources among people of working age throughout the entire country. This can be done through effective labour market policy and by taking other types of initiatives in other policy areas, such as economic policy, industry policy, education policy and social policy, in line with what has been mentioned above.

Irrespective of the economic situation, it is essential to harness the resources of the unemployed. Efficient matching is essential, although many unemployed also need skill training. As well as education, on-the-job training may also be required in many instances, in order to provide the essential work-life experience.

About 370,000 people are registered as unemployed at the Swedish Public Employment Service, (including persons in programmes with activity support). Of those 370,000 unemployed, more than 100,000 have been unemployed for more than three out of the past 10 years. This group of long-term unemployed comprises persons who have recurring periods of unemployment and who have difficulties finding a stable foothold in the labour market. This is one of several ways to measure the size of the groups that have difficulties establishing themselves in the labour market, irrespective of the economic situation. The methods used to measure this form of harmful unemployment vary as, consequently, do the results (Devine and Kiefer 1991).

The group of unemployed with the greatest difficulties in entering the labour market, irrespective of the economic situation, is often referred to as the structurally unemployed. In an international comparison, Sweden had the lowest share of structurally unemployed in Europe. Minimising structural unemployment remains

the single most important task for labour market policy. One way of reducing this type of unemployment is to increase the employability of the unemployed by means of training and/or work experience.

It is also possible to limit structural unemployment by stimulating job creation in sectors that have lower skill requirements.<sup>11</sup> However, this will not counteract the effects of the generational shift. But it will affect the number of hours worked and will therefore provide a positive contribution to GDP growth. Over the coming years, there is a need to focus on a selective labour market policy that concentrates resources on the unemployed who have the greatest need for different measures. This would help to constrain the growth of structural unemployment and thereby alleviate the negative impact of the generation shift.

The focus of labour market policy is on the avoidance of long-term unemployment. Among other things, this work involves a search for new and more sustainable solutions to harness the labour resources that can be found among groups that have the greatest difficulties in finding employment. Many of them have limited education, elementary school at best. About one of three of the unemployed (including jobseekers in programmes with activity support) registered at the Swedish Public Employment Service have not completed upper secondary school.

Certain groups are over-represented among those who have particular difficulties in finding employment: unemployed people from 55 to 64 years of age, groups of foreign born, individuals with occupational disabilities and young adults who left school without a leaving certificate. Labour market policy has always lacked instruments to provide a more adequate education programme, such as an upgrade to upper secondary school level for those unemployed who lack a proper upper secondary school education. Those groups of unemployed that are far from reaching that level need long-term training commitments; to start with, basic adult education, followed by vocational training. Municipalities have the primary responsibility for the provision of longer basic education programmes for their citizens. However, this issue requires more collaboration between the municipalities and the Swedish Public Employment Service in order to improve the employability of the unemployed, who lack the necessary basic education.

One trend that will affect the labour supply, both in the short term and in the long term, is the fact that young adults in each age group leave elementary school and upper secondary school without a certificate. This is also a dilemma shared by other countries. This share has remained unchanged in Sweden in recent years at around 20% for each single age group. About half of this group finish their education at a later date. However, the other half is faced with huge difficulties entering the labour market, even during periods of high labour demand.<sup>12</sup> That is why it is essential to

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<sup>11</sup>A person who hires to do ROT (Repairs, Concersion, Extension) or RUT (Cleaning, Maintenance and Laundry) work may receive a tax reduction—A ROT or RUT deduction for cost. Material costs and travel expenses arising in connection with the work do not confer entitlement to ROT and RUT tax deductions.

<sup>12</sup>Approximately 5% of each age group.

minimise the size of this group as early and as much as possible, naturally facilitating the generational shift.

Another way of increasing the labour supply is to improve mobility in the labour market, i.e. encouraging the unemployed to switch professions (from declining to expanding professions) or to move to a new location. Such measures are exceedingly important in order to resolve recruitment problems. The Swedish Public Employment Service is actively working to enable jobseekers to accept jobs in places outside their home region. Commuting is an alternative solution that offers substantial potential for further development in the future. Commuting to work often brings benefits to the home municipality as well as the municipality in which the workplace is located. Infrastructure investments are important to facilitate commuting, in both roads and railroads.

### ***7.5.3 Foreign-Born Residents Constitute an Important Labour Potential***

The greatest potential for an increase in labour supply and employment in the future rests with foreign-born residents, particularly with non-European women.<sup>13</sup> The entire chain of integration, from the point of arrival in Sweden to the final objective of gaining employment, must be improved. For that reason, the Swedish Public Employment Service has been given responsibility for the entire integration process concerning newly arrived refugees.<sup>14</sup>

Skills in Swedish language are important and essential for immigrants seeking to establish themselves in the labour market. Swedish teaching for new immigrants plays an important role. However, the quality of these teaching programmes has been criticised in a number of municipalities for failing to provide adequate skills. Validation schemes that would better assess the skills of foreign-born residents are also important. This applies to both education and work experience. Nearly 50% of new immigrants (refugees) who register at the Swedish Public Employment Service lack a leaving certificate at the upper secondary level. In order to provide an upper secondary level education to as many of this group as possible, vocational study programmes will have to be expanded in many municipalities. It is also important to change attitudes and to increase the understanding of foreign school leaving certificates among employers and fellow workers. In this context, the everyday business-focused approach adopted at the local employment offices is invaluable.

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<sup>13</sup>Public Employment Service, Labour Market Forecast 2006–2012.

<sup>14</sup>The Introduction Activity Act targets newly arrived immigrants of working age (20–64) who have been given residence permits as refugees, or quota refugees. Newly arrived immigrants 18–19 years of age, with no parents in Sweden, are also covered by this law, as are relatives of new arrivals. The new law came into effect on 1 December 2010.



It also establishes networks that enable unemployed immigrants to obtain employment and work experience.

#### ***7.5.4 Women: An Underutilised Labour Potential***

Labour market participation still differs between men and women. According to the 2015 Swedish Labour Force Survey, the relative participation rate among men 16–64 years of age was 84.8%, compared to 81.0% among women Statistics Sweden. There is accordingly a labour potential to be found among women, primarily among foreign-born women. This varies between different parts of the country. Participation rates are higher in the urban centres and lower in rural areas.

However, it is difficult to establish to what extent it is possible to even out participation rates between men and women as well as between regions. The fact remains that there is still work to be done even though female labour market participation rates in Sweden are much higher than in most other countries. Further efforts to raise the female participation rate can be undertaken across a wide spectrum, covering several policy areas. It involves issues of geographic mobility, distribution of job opportunities, education, breaking with cultural traditions, infrastructure, parental leave, childcare, etc.

#### ***7.5.5 The Elderly: An Important Resource***

The elderly are also an important labour resource even though by European standards, Sweden has high participation rates among the elderly Statistics Sweden. The primary issue is how to get as many as possible to work until retirement age, which is currently 65 in Sweden. However, it is also a question of how to incentivise a greater number of people to continue working after 65. Increasingly, people continue to work after the age of 65, usually to 67.<sup>15</sup> There is an ongoing political discussion about raising the right to remain in work until the age of 69.

A significant characteristic of those who work between 65 and 69 years of age is that many work part-time. One way of encouraging people to work until 65 years of age or beyond can be to improve the conditions for part-time work for elderly labour. It would also improve the opportunities for transferring knowledge from senior members of the labour force to new employees. The new pension system has established clear incentives for elderly workers to remain in the labour market for longer.

Potential labour resources are as follows:

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<sup>15</sup>Currently a person has the right to work until the age of 67. After 67 a person has to have an agreement with the employer to continue to work.

- Intensive work programmes to provide the structurally unemployed in declining sectors and occupations with viable skills that will help them find a new job.
- Young people with inadequate education. These groups are greatly affected by high unemployment and many remain outside the labour market.
- Young people who are entering the labour market and whose education does not correspond to labour demands.
- Unemployed who lack full upper secondary education.
- Foreign-born residents who have an inadequate education, particularly women.
- Unemployed persons who have occupational disabilities. This group is often extremely vulnerable to high unemployment.
- Elderly unemployed workers.
- Unemployed persons who lack geographical mobility.
- Regional differences in terms of labour force participation.

### ***7.5.6 Population, Employment and Economic Growth***

Population growth is considered a key factor in generating local economic growth (Klepke 2001). Together with employment growth, population growth is often used as an indicator of local growth (Bartik 2005; Wolman and Spitzely 1996; Heldt Cassel 2008). An increase in residents' income is also a common indicator of local growth.

The factors underlying local economic growth may be viewed from a number of different perspectives. Public investment in infrastructure is said to be an important factor in generating local economic growth. More recently, the emerging concept of regional growth has come to include dimensions other than population, employment and income (Swedish Institute for Growth Policy Studies 2008a). In addition to the economic perspective, ecological and social dimensions have been given greater emphasis in different analyses.

A broader definition of local growth may be formulated in terms of sustainable economic growth, measured as some form of regional GDP value that encompasses the opportunity to develop in such a way that welfare in a broad societal perspective increases (Arena for Growth 2006). Growth and development thus go hand in hand. Municipalities around Sweden are different; conditions differ, which means that every municipality must find its own way to define measures and its own policies regarding local economic development. Work on growth issues must take into account each individual municipality's specific context (Westholm et al. 2004; Brorström and Siverbo 2008). In general, it is not possible to say that a specific growth strategy would be better than others. It is important to observe those differences in population development and other key conditions in the process of planning appropriate activities which are relevant for the choice of growth strategy for municipalities, and the municipality's ability to develop welfare (Hautbois and Durand 2004).

As mentioned above, there is no one solution or measure for local growth that fits all municipalities Arena for Growth (2001). Emerging policy must be adapted to the particular circumstances and the particular context prevailing in a municipality.

Municipalities can initiate their own activities that contribute to the development of the municipality towards a specific growth perspective (Bartik 2005; Robichau 2010; Lobao and Kraybill 2009). However, the intensity and pace of development depends in many cases on how the municipality co-operates with its local and regional partners. A municipality's main mission in the growth policy is to create good basic social institutions and to take on the leader's jersey for local development.

### ***7.5.7 Private and Public Entrepreneurship***

Increasing entrepreneurship provides a more robust foundation for local employment which is less sensitive to cyclical fluctuations and makes opportunities for increasing employment in the long term Audretsch DB (2007). A local labour market with a strong culture of entrepreneurship and innovation is better able to meet rapid market adjustments. Municipal organisations also need to have an increased capacity for adaptation that helps them to cope with the competitive situation for inhabitants, businesses and visitors. An important part of a local growth strategy will be measures to promote private and public entrepreneurship.

Entrepreneurship for economic growth has been studied by several researchers. At a national level, the relationship between economic growth and entrepreneurship has been studied by country data for a number of OECD countries in 1990. In that study, where the amounts of physical and human capital were held constant, countries with a higher level of entrepreneurship also turned out to have higher growth. A positive relationship was also identified between entrepreneurship and economic growth at the regional level in several countries, as well as in a panel of OECD countries. The empirical results are consistent with the assumption that entrepreneurship, by facilitating the dissemination of knowledge, strengthens economic growth.

There is a clear correlation between economic expansion and a region/municipality's ability to attract the skills that are required for good economic development. Some of the factors that create attractiveness may be influenced by individual municipalities, while others require action at the regional or national level. Creating a good business environment is something that all municipalities are working towards today. However, there are major differences in the degree of activism pursued by individual municipalities in Sweden.

A variety of factors are important for each company which chooses to set up a new business. Moreover, these factors are linked in a complex fashion. Terms and conditions, such as wage rates, laws and regulations, fiscal and monetary policy and tax levels are some of the important factors that influence foreign companies locating in a particular country. However, these factors play a lesser role in relation to the choice of location within a country. The ability to keep companies within a region is at least as important as the ability to attract businesses, since it is usually much easier to meet the needs of established businesses than to attract new businesses.

The factors that are most critical to a company's choice of location are of course dependent on the industry within which the company operates. A company that manufactures products in the form of goods is dependent on access to an efficient transport system while knowledge-intensive service companies are more reliant on proximity to other businesses that use these services.

Accessibility is a key word when it comes to creating attractiveness for business. In addition to the access provided by an efficient transport system to customers and/or to other businesses in the vicinity, companies also require access to a range of services and a workforce that has the right skills. In this context, a well-functioning public transport infrastructure is crucial. The service that companies demand from authorities and municipalities must also be accessible and function in a smooth manner. These factors provide a fundamental base for what companies expect.

Companies and industries that are innovative and knowledge-intensive derive particularly great advantages from a central location that offers good access to both customers and suppliers. Research shows that there are three contributory mechanisms. These are sharing, matching and learning. In short, this means that geographic concentration facilitates and stimulates processes that enhance specialisation.

Companies, especially knowledge-intensive ones, are entirely dependent on the availability of skilled labour. Human capital is the most important resource and will be even more valuable in the future. Questions about skills and recruiting appropriate labour are therefore important factors for business start-ups. The ability to recruit people with a high education and special skills will be an important part of attracting more companies and also allowing existing firms to grow. This can either be done by attracting expertise relevant to a particular region/municipality or by creating favourable conditions for commuting from other regions/municipalities.

It is of great importance to encourage and facilitate a good business climate for economic development, nationally, regionally and locally (Therkildsen et al. 2009). One important characteristic that emerges from the two case studies is that the tourist industry plays an important role in relation to growth potential. The sector is multi-faceted and it is therefore essential to have a clear strategy on how it can best be developed in each region.

The potential for long-term development is also evident in several other industries in the studied regions, for example in historically traditional industries such as mining, manufacturing, construction and forestry. Labour supply represents a central long-term issue in all those industries as a result of the increasing number of retiring people in these local labour markets. Can the regions attract persons with suitable skills, well-qualified specialists that all employers need to recruit?

### ***7.5.8 Immigration of Labour***

A central approach to increasing labour supply in local labour markets is to raise net migration in the long term. One possibility is to increase labour immigration. This

possibility has been expanded since employers have been given extended opportunities to recruit labour abroad.<sup>16</sup> On the one hand, the European Union constitutes a common market; on the other, the employers themselves determine whether there is a shortage within a profession. Thus, they are able to look for labour outside the European Union. Although this is not a universal cure that will solve all of the labour needs that will occur in the coming decades, it will provide assistance to sectors suffering from a domestic shortage of skilled professionals. There will also be increased labour competition within the European Union since many other countries are struggling with demographic problems brought on by an ageing population.

The results of our analysis show that net migration needs to be at least maintained at high levels at a national level in order to ensure continued growth of labour and employment in Sweden as a nation. However, it is clearly evident from our case studies that a lot more can be done at regional and local levels. The two case studies show that the inflow of foreign labour is weak and the local labour market needs at least to double the inflow of new labour to maintain current levels of employment. The analysis also shows that the inflow of youth into the labour market is just sufficient enough to fill retirements in the public sector. It is obvious from our study that all of the studied regions need to increase the amount of foreign labour on quite a large scale and at the same time work even harder to raise the activity rate among groups that have low labour force participation.

The two case studies very clearly show that the regions need to focus a lot more on measures that will attract labour from other countries. The inflow of foreign labour is limited in these two case study regions, particularly in Kiruna and Pajala. Given the large number of elderly workers leaving the labour force, labour resources will be very limited in the long term. It will be a hard challenge to increase employment and economic growth, which is a main goal in all regions. First, it will be a very difficult challenge to find enough labour in each region to fill all the vacancies that arise when people retire, particularly in certain sectors. Second, it will be an even harder challenge to increase employment and economic growth.

There is an ongoing debate about the level of immigration, especially in certain regions, where some argue that immigration has become too extensive. The inevitable conclusion from our analysis is that net immigration and foreign-born participation rates will play a significant role in changes to the Swedish labour market over the coming decades. The question therefore, is not whether regions in Sweden should have immigration, but how extensive it should be and how Swedish regions can harness the important labour resource that immigrants represent.

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<sup>16</sup>In 2008.

### ***7.5.9 Increasing Labour Supply with Higher Education: Certain Professions***

An important factor affecting regional growth is the availability of labour and in particular the availability of high-skilled workers (Swedish Institute for Growth Policy Studies 2008b; Lidström 1998). In Sweden, access to higher education has increased in recent decades and there is good access to higher education in all 21 counties. The planning of education mainly takes place at the regional level and in this context it is important that regional and local actors are working together to achieve good solutions to meet an upcoming demand for labour. The municipalities in the case studies mentioned the long-term importance of reaching a sufficient inflow of graduates into the local labour markets.

In order to counteract the looming shortages in different professions, more people had to choose educational programmes—in both upper secondary school and adult education—that focus on health and social care, construction as well as manufacturing and high technology. Social and elderly care is one example where it is unreasonable to expect that upper secondary schools can provide the whole labour market with labour. There is, however, an insufficient interest in these programmes among young people. In the long term, the need for labour in these fields is considerable. To meet this demand, municipalities must provide a higher level of adult education but also consider other forms of actions for increasing labour supply, not only in this sector.

In order to make it possible to implement the changes that are essential for upper secondary school programmes, stakeholders need to provide more information about professions and labour market needs to both parents and students as well as to people in adult education. This information is necessary to influence people's attitudes and to provide students with an opportunity to gain a better idea of the content and prospects for various professions. As early as elementary/upper secondary school, municipalities need to provide pupils with knowledge about professional and labour market prospects. All involved parties must take their share of responsibility, not only the municipality but also labour unions and employers' organisations. Surveys show that, to a great extent, pupils choose their education based on media information concerning the prospects for different fields and professions.

### ***7.5.10 Collaboration Between Stakeholders***

It is essential that municipalities take a broad approach to issues surrounding future labour supply. Contacts and collaboration between regional/local actors are at the heart of this effort. This involves extended collaboration between education co-ordinators, private industries, labour unions, the Swedish Public Employment Service and municipalities. The Swedish Public Employment Service's industry

forums comprising different actors concerning labour market issues play an important part in the efforts to develop strategies for tackling labour needs in a future labour market.

It is important that different stakeholders collaborate and participate in the process during the planning of (new) educational programmes so that a growing number of individuals will find educational opportunities in areas where labour needs are the greatest, shifting the emphasis away from educational programmes where there is a more or less steady surplus of jobseekers. The shortage of graduates had to gradually increase in certain professional fields due to the retirement of a growing number of elderly skilled professionals as well as to meet the need to increase the overall number of employees in particular sectors. More extensive efforts are necessary to strengthen the supply of skilled labour within professions that have high retirement rates. If nothing is done to change the trend, there will be a shortage of skilled labour within certain professions, something that will inevitably impact on recruitment and the work environment as well as production and services in both private industries and the public service sectors, especially in certain regions.

### ***7.5.11 Future Inflow of Labour: Attracting Labour to the Regions***

There are many factors which affect the attractiveness of a region in relation to recruiting labour. Some classic factors include high wages and good employment conditions. More recently, attention has increasingly begun to be paid to other, softer values such as access to housing, good recreational and cultural activities, good access to childcare and schools. At the same time, the conclusion is that people are relatively reluctant to move, at least after they have finished studying or started a family.

Attracting labour is a long-term and multi-faceted task and consists of efforts on many levels. These include strategies to attract and retain graduates and skilled labour in the region. It also involves strategies to reach foreign labour in other countries that are willing to move to Sweden and to a specific region, increasing labour market immigration into a local labour market. Regions and municipalities have had to have long-term strategies for increasing the supply of skilled labour, including measures to influence future labour potential, as well as the educational system (Trendle 2009).

One advantage that has been highlighted in order to attract foreign labour is the argument that Swedish business culture is generally characterised by a non-hierarchical approach. This is of great importance for employees of a company who will, in many respects, be given the opportunity to develop their own ideas and thereby contribute to the company's success. In many other countries, the business environment is far more hierarchical and does not allow the same scope for

employees to contribute to innovation and renewal. To attract foreign expertise, the opportunity for both persons in a relationship to find a job that matches all their requirements in a new location may well be of crucial importance. It is also important to create social spaces for people who may not already have a network of friends and family.

The provision of good vocational guidance and counselling to schoolchildren and other potential future labour is a vitally important measure. The inflow of new labour to the local labour markets will not be sufficient to make up for all the elderly retirements in our case studies. Hence it is important that people entering the labour market have an education that makes them employable. All of the municipalities foresee difficulties in recruiting labour within certain sectors that require university degrees.

The municipalities in the case studies are actively working with the university in the region in order to influence both the content and the direction of its programmes in order to provide the local labour markets with suitable labour for future needs. In order to attract people to the region, the municipalities are marketing themselves and the future needs of labour, for example at trade fairs and conventions. All these activities need further attention.

### ***7.5.12 Attractiveness, Services and Infrastructure***

Recent attention has been focused on the need to provide access to good municipal environments and service. It is considered to be an important factor in attracting population and labour resources. This is partly borne out by the case studies as well as by other studies. The municipalities strive to maintain high levels of quality in their core areas of health, social care and education. It is considered essential to offer inhabitants high standards in those areas in order to make it attractive stay in the region. In addition, it is an appealing factor when they are trying to attract people to move there. Culture and leisure are also important factors for attracting people to the regions. The municipalities are investing in areas such as theatre, music, literature, nature and a series of sporting facilities (Rönblom and Hudson 2007).

One problem that municipalities all over Sweden are facing, especially in relation to rapid economic development, is that the demand for housing far outstrips the supply (NORDREGIO, Stockholm 2011). As a result, housing queues become very long. Municipalities make investments in new housing and plan to continue investments in housing. These plans, however, may often be limited by a lack of resources in municipal budgets. This may in turn raise obstacles in the path of increasing employment and improving economic welfare in the region.



## 7.6 Summary of Measures for Population, Labour Supply and Employment

The following comprises a list of some important examples regarding how municipalities can facilitate the generation shift in different regions. In all probability, there is more that can be done to counteract the negative impact of the generation shift. However, the examples below are the most important:

- High level of immigration in order to increase the working-age population, particularly in professions that have a deficit of skilled labour.
- Effective integration of foreign-born citizens. This may differ between regions.
- Measures to facilitate future industrial and business development.
- Attracting young people to programmes aimed at professions where there is a labour shortage, and particularly in professions subject to skill shortages that attract little interest among young people.
- Shortening the periods of study in the educational system and increasing the share of young people who have upper secondary leaving certificates.
- Extensive efforts by stakeholders, authorities, industries, labour unions and employer's organisations, etc., to disseminate information about professions. The target audience comprises both adolescents and adults, i.e. pupils, students, parents, teachers, guidance counsellors, etc.
- Adult vocational education for foreign-born, new immigrants as well as other foreign-born residents who have a weak educational background (manufacturing, construction, health and social care).
- Developing the attractiveness, infrastructure and services of regions.
- Increasing the opportunities to raise the supply of housing in areas of high housing shortages.
- Collaborating between municipalities concerning municipal services—IT, salaries, water, waste, skill supply.
- Improving collaboration between different stakeholders to find strategies for attracting new labour, both in Sweden and abroad.

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# Chapter 8

## Population Ageing and Retirement Security in Korea

Sunhwa Lee

Korea's rapid economic achievements over the last half century had provided much inspiration for developing countries in Asia. As Korea's economy matures, it now evokes important social and economic lessons with its unique set of challenges posed by rapid population ageing. Korea's economic growth was much underpinned by development strategies, especially those emphasizing family planning and investments in education. The fertility rate fell from an average of six children per woman in 1960 to 1.1 in 2006. Improved living standards and health status increased Koreans' life expectancy from 62 in 1970 to 81 in 2010. Rising life expectancy and falling birth rates are now ushering the country into a stunning demographic transformation: the elderly population aged 65 and older, which made up only 4% of its population in 1980, has increased to 13% in 2015 and is to reach 20% in 2026 (Statistics Korea 2016a). What is striking is not a sheer magnitude of the growing elderly population, but its pace of population ageing with serious implications for income security of the growing elderly population.

Is Korea's growing older population preparing themselves for retirement security to sustain their current standard of living? Is the Korean government ready to provide minimum economic security for its growing older population? This chapter attempts to answer these questions by examining the income security of the elderly population in Korea. It provides an overview of different income sources for old age, highlighting changes in the role of public pensions, private savings, earnings, and intergenerational family support. The chapter begins with discussions on the pace of population ageing in Korea, along with its associated changes in elderly living arrangements and social norms on old-age support. Following an overview of the national pension system, the chapter presents key findings from existing data and research on income sources of the elderly to shed light on challenges faced by

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the government and individuals in preparing for retirement. The chapter concludes with policy implications for public pensions and employment opportunities of older people.

## 8.1 Ageing in Korea: Demographic Transformation

### 8.1.1 Trends in Population Ageing

Population ageing in Korea is proceeding in an unprecedented pace. Korea reached an “ageing society” in 2000 with older people 65 and above making up at least 7% of the total population. The country is moving toward an “aged society” by 2018 when the elderly will make up 14% of the population, and is to become a “super-aged society” in 2026 with the 20% elderly population (ESCAP 2015; Statistics Korea 2016a). What is remarkable is the accelerated pace of ageing, compared with other countries undergoing a similar process of population ageing. For instance, Japan has already become a super-aged society in 2006, but it took 24 years to move from an ageing to an aged society (from 1970 to 1994) and another 12 years to reach a super-aged society (from 1994 to 2006). In Korea, it has taken only 18 years to make a transition from an ageing to an aged society, and is projected to take mere 8 years to become a super-aged country (ESCAP 2015). The median age of the overall population will continue to climb, from 22 in 1980 to 38 in 2010 and to 53 in 2040 (Table 8.1).

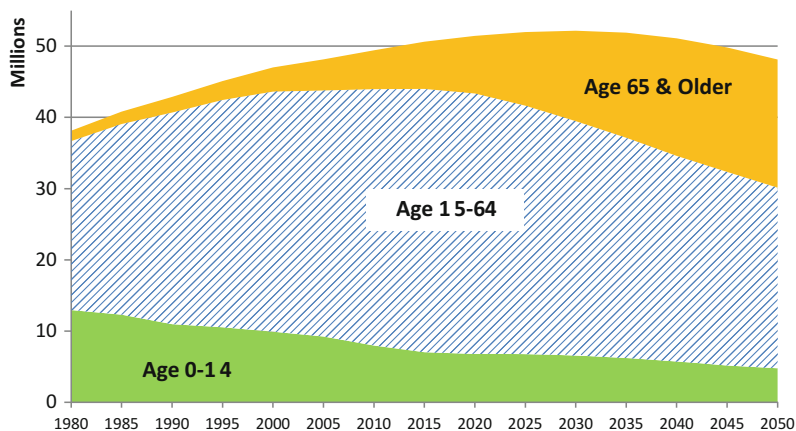
What is driving such rapid population ageing in Korea? Two major demographic trends are well known in this regard: precipitous declines in fertility rate and rising life expectancy. As a key development policy during the 1960 and 1970s, family planning was emphasized to control population growth, reduce poverty, and improve per capita living standards. The total fertility rate was 6 per woman as of

**Table 8.1** Population ageing and key demographic trends in Korea

	1970	1980	1990	2000	2010	2020	2030	2040	2050
Total population (million)	31.4	37.4	43.4	46.0	49.1	51.4	52.2	51.1	48.1
% aged 65 and older	3.3	3.9	5.0	7.3	11.0	15.7	24.3	32.3	37.4
% aged 15–64	54.6	62.2	69.3	71.7	72.8	71.1	63.1	56.5	52.7
% aged 0–14	42.1	34.0	25.6	21.1	16.1	13.2	12.6	11.2	9.9
Dependency ratio <sup>a</sup> (older persons)	5.7	6.1	7.4	10.2	15.2	22.2	38.6	57.2	71.0
Median age	18.5	21.8	27.0	31.8	37.9	43.4	48.5	52.6	55.9
Total fertility rate	4.5	2.8	1.6	1.5	1.2	–	–	–	–
Life expectancy	62.0	65.7	71.3	76.0	80.8	82.6	84.3	86.0	88.3

Source: Statistics Korea (2011). Population Projections for Korea, 1960–2060; Statistics Korea (2016a). 2016 Statistics on the Aged; Statistics Korea (2016b). Statistical Database on Mean and Median Ages at First Marriage

<sup>a</sup>Dependency ratio is calculated as (population aged 65 and older/population aged 15–64) × 100



**Fig. 8.1** Trends in population size by age, 1980–2050. *Source:* Statistics Korea (2011), Population projections for Korea, 1960–2060

1960, which fell to 2.8 by 1970 and then to 1.6 by 1990 (Table 8.1). Korea's fertility rate reached a record low of 1.1 in 2006, the lowest in the world, which has stabilized since then at around 1.2. At the same time, rising living standards, improved nutrition, and increased access to health care have led to gradual increases in life expectancy, from 62 in 1970 to 81 in 2010.

The challenges of rapid population ageing can be displayed in the changing population composition (Fig. 8.1). The total population is expected to reach 52.2 million in 2030, after which the population will begin shrinking. The school-age population (below age 15), which peaked during the mid-1970s, had already been shrinking. While the working-age population (age 15–64) has been moderately increasing, it is to peak in 2016 and start contracting afterwards. By 2050, working-age adults will be almost one-third less than the current level in 2015, decreasing from 37 million to 25 million. This will create a significant rise in the elderly dependency ratio: for every ten working-age adults, there will be seven elderly persons to support by 2050, compared to two in 2020. That is, there will be fewer and fewer working-age men and women who can support the growing elderly population, whether that support is provided through the family or public pensions.

The continuous fall in fertility in Korea, a major force behind rapid population ageing, reflects to a significant degree the changing role of Korean women, amidst relatively slow changes in social and economic institutions. Women's educational attainment, as well as men's, increased substantially during Korea's development years, encouraging women's career aspirations: between 1995 and 2008, the proportion of women graduating from high school and advancing to higher education increased from 50 to 84% (Choe and Retherford 2009). Women's labor force participation also increased considerably, especially among those in their 20s and 30s: the participation rate rose from 32% in 1980 to 70% in 2010 for women in their 20s, and from 14 to 54% for those in their 30s (Statistics Korea 2012). Nevertheless,

combining employment with family responsibilities continues to place great burdens on Korean women for several reasons: long working hours make it difficult for women to combine dual responsibilities, the availability of childcare facilities is not sufficient to meet the demand, and women are still expected to be the primary bearer for family and childcare responsibilities at home. Moreover, high competition placed on children's education and its associated high expenditures make having a child very costly for Korean families, while putting disproportionate pressure on women for children's success. All these challenges facing women are leading to delays in marriage and childbearing or fewer children, especially when women wish to pursue their careers. As a result, there continues to exist a large gender difference in the overall labor force participation, 52% for women and 74% for men in 2015 (Statistics Korea 2016c).

In addition, general economic slowdowns relative to earlier decades, intense competition in the labor market, and declining income stability among younger generations make marriage increasingly less attractive—often viewed as a “luxury” (Korea Times, March 2016; Korea Joongang Daily, January 2017). According to social surveys in Korea, the majority of Koreans in 1998 felt that marriage is necessary (80% of men and 68% of women); by 2016, that proportion fell to just over half, 56% for men and 48% for women (Statistics Korea 2016d).<sup>1</sup> The crude marriage rate (the number of marriage per 1000) was reported to be 5.9 cases in 2015, the lowest ever since 1970 when this statistic was first estimated. Consequently, the mean age at first marriage has increased: from 24.8 in 1990 to nearly 30 by 2015 for women and from 27.8 to 32.6 for men, respectively (Statistics Korea 2016b). For women, the mean age at childbearing also increased from 27.1 in 1981 to 31.3 in 2010.

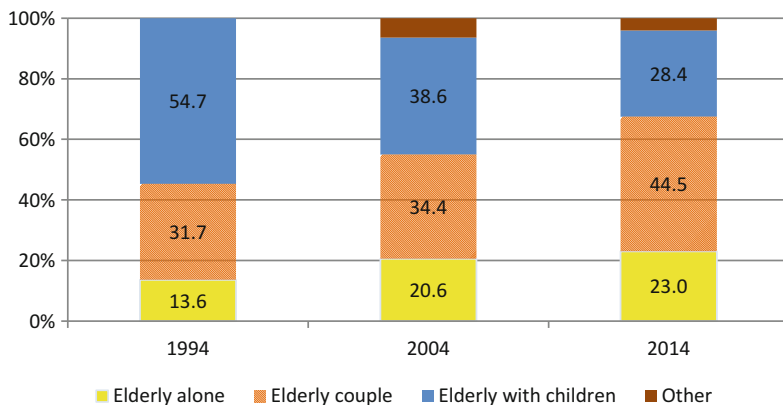
Concerned with sustained low fertility and rapid population ageing, the government since the 1990s has initiated various policies and programs aimed at increasing birth rates: expansion of child care facilities particularly for working women, special education and housing allowances for second child or more, extension of maternity and paternity leave provisions, promotion of changes in workplace culture, and so on. So far, no policies or programs have shown any visible result in reversing the sustained low fertility levels.

### ***8.1.2 Trends in Elderly Living Arrangements***

Korea's population ageing reflects not only dramatic demographic transformation but also broader social changes, especially social norms regarding family structure and intergenerational relationships. While the family has traditionally been a main

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<sup>1</sup>These percentages represent combined responses for “you have to get married” and “it is good to get married.” Between 1998 and 2016, the decline is particularly noticeable for the response “you have to get married,” which fell from 34 to 13%, similarly for both men and women.



**Fig. 8.2** Trends in elderly living arrangements in Korea, 1994–2014. *Source:* Korea Institute for Health and Social Affairs (KIHASA). Various Years. *Survey of Elderly Status*

source of retirement security for Koreans, such a family support system is waning quickly. Growing affluence and the prevalence of nuclear families produced significant shifts in traditional social norms on elderly support, including living arrangements.

Figure 8.2 shows the extent of transformation in elderly living arrangements during the past two decades. The percentage of elderly people (aged 65 and older) living with their children fell by nearly half, from 55% in 1994 to 28% in 2014. By contrast, almost half of the elderly (45%) in 2014 were living only with their spouse, increased from 32% in 1994. The percentage of elderly living alone has also increased from 14 to 23% during the same period. Put it together, nearly two-thirds of the elderly today are likely to live either with their spouse or on their own, whereas less than one-third are likely to live with their children. Yet, we cannot necessarily assume that those living with children are receiving support. Of those living with children, about 40% do so because their children are not yet independent, another 20% do so to help their married children with childcare and housework, and only 32% do so because they themselves cannot live independently (Statistics Korea 2016b). There are other variations by demographic attributes: the elderly above age 85 are more likely to live with their children compared with younger elderly, and the elderly living in rural areas are more likely to live alone as their children are more likely to have moved away into urban areas (Lee 2014).

Along with shifts in elderly living arrangements, social norms on old-age support have also changed. According to annual social surveys, the vast majority—about 90%—of Koreans in 1998 still believed that it is the family’s responsibility to support the elderly. In 2014, only one-third held the same view. Nearly half in 2014 believed that old-age support is the responsibility of both family and government, whereas this view was held only by 18% in 2002. Importantly, the share of those believing that old-age support is the elderly’s own responsibility increased from 8% in 1998 to 17% in 2014 (Kim 2014).



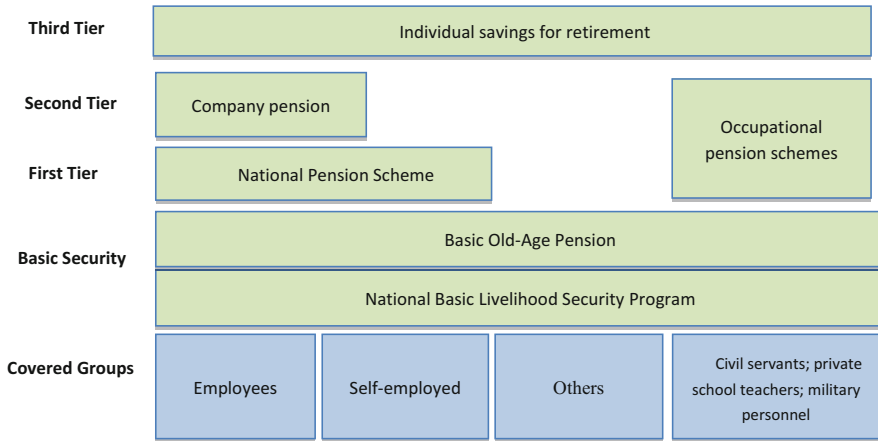
While the elderly increasingly feel that they need to support themselves in old age, their actual readiness does not match their expectations: they have not saved sufficiently for their retirement and public pension is not mature enough to support them adequately. Although the majority of elderly now live on their own, many still receive some type of financial support from their children. Various surveys of the elderly indicate that approximately 40–50% of elderly parents receive some financial support from their children (Kim 2010; Lee 2014).

The lack of preparedness for retirement among Koreans—both at the individual and the societal levels—is evidenced by high poverty among the elderly. An OECD report shows that nearly half (49%) of the population 65 and older in 2011 were living in relative poverty, which is the highest among OECD countries and almost four times higher than the OECD average of 13% (Jones and Urasawa 2014). Moreover, the poverty rate for the elderly in Korea is more than three times higher than the national average (15%), showing the greatest poverty gap among all OECD countries. The average income for Korean elderly is found to be only 61% of the national average, compared with the corresponding OECD average of 86%.

Old-age pension is a key income source for the elderly in most advanced countries, although the type, coverage, and adequacy of pensions vary from country to country. To what extent is the Korea's pension system supportive of the elderly and what are its future prospects in supporting the rapidly ageing population? If the current pension system is not adequate in terms of both coverage and benefit levels, what are alternative means of income for retirement security? The remaining sections review the national pension system in Korea and major income sources for the elderly over time.

## **8.2 The Support System for Old-Age Income Security in Korea**

Excluding traditional family support for old age, Fig. 8.3 shows the current multi-pillar income support system for the elderly population in Korea. Korea's old-age income support system has developed without systematic planning, and the overall public support system has emerged gradually only during the past two decades or so. While Korea has had special public pension schemes (occupational pensions) since the 1960s, these covered only a small fraction of employees such as government employees and the military personnel, which later included private school teachers. A public pension system for private-sector workers—the national pension scheme—was established in 1988 as a main pillar of income source for the growing older population. At the second pillar, private employment-based pension plans have been limited until very recently, consisting of lump-sum severance pay allowances and being available only for long-term contract employees. Employment-based severance pay allowances are being converted into corporate pensions since 2005. In addition to these pension schemes, basic old-age pensions



**Fig. 8.3** Old-age income support systems in Korea. *Source:* Jones and Urasawa (2014)

introduced in 2008 and the basic livelihood security program started in 2000 provide limited income sources in old age as social welfare programs. The descriptions of pension schemes and welfare programs are below.

### 8.2.1 National Pension Scheme

While population ageing is proceeding rapidly in Korea, the country adopted a national pension scheme relatively late for the general public compared to other OECD countries. The National Pension Scheme (NPS) was first introduced in 1988, but its initial coverage was limited to regular employees in firms with at least ten employees. The scheme was gradually expanded to include different types of employees, as well as self-employed. Since 1999, the scheme became mandatory by law. As a result, the number of insured persons increased from 7.8 million in 1996 to 20.3 million in 2012. About 55% of the working-age population (age 18–59) in 2012 was insured, but only 43% was actually contributing to the NPS, which is far below the level of 80–100% common in other advanced countries (Lee 2012). The low rate of coverage suggests a large number of self-employed or non-regular workers who are not contributing to the NPS, as well as a lack of trust in the pension system (Jones and Urasawa 2014).

The NPS requires at least 10 years of contributions to be eligible for benefits; hence, many of the elderly today have not had the long enough opportunity to subscribe to it for its benefits. In 2015, the NPS provided benefits to 37% of the elderly 65 and over, with a significant gap between men (53%) and women (25%). Pension benefits were also small at about KRW 330,000 per month (\$276). With full 40 years of contributions, the income replacement rate is set to decrease from

48% in 2012 to 40% by 2028. Therefore, with its low coverage and low benefit levels, the NPS is not likely to be a sufficient income source for the elderly today.

### ***8.2.2 Special Occupational Pensions***

The occupational pension schemes are the oldest pensions, which started in the 1960s and 1970s for civil servants, military personnel, and private school teachers. These schemes insure about 4% of the working-age population, with civil servants scheme accounting for 70% of the total. The benefits are more generous than the NPS and also relative to contributions. These schemes have been at the center of reform discussions since 1990, because their generous benefits for a large number of pensioners have led into financial trouble and the scheme increasingly relies on government subsidies (Jones and Urasawa 2014).

### ***8.2.3 The Company Pension System***

In 2005, the government launched a plan to encourage the conversion of the mandatory retirement allowance into a company pension, in order to provide better income security for retired workers. This was intended to transform traditional severance pay schemes to annuity-based retirement programs. The traditional scheme, which was introduced in 1953 and became mandatory in 1961, requires firms to pay lump-sum allowances for departing employees. Because of high labor turnover, most workers receive this allowance numerous times during their working life, encouraging them to use for purposes other than retirement savings.

According to a 2014 survey of 500 Koreans in their 50s and 60s who retired after 10 years on the job, 93% reported receiving their retirement pay in a lump sum, 5% in annuities, and 2% in a combination of both. Those who received their retirement pension in a lump sum were more likely to spend for consumption purpose rather than to save or reinvest for old-age income (KIHASA 2014). This suggests that many Korean retirees who forgo annuities during their career probably did not have much for retirement income security.

### ***8.2.4 The Basic Old-Age Pension System (BOAP)***

The BOAP was introduced in 2008 as a social welfare program to provide basic income support to the elderly who were at the 70% income scale. The benefit was set at 5% of the average income of persons contributing to the NPS during the preceding 3 years. In 2012, the benefit was about KRW 97,000 (\$93) or 3% of the average wage, which amounted only 16% of the minimum cost of living. Since

2014, the benefit was doubled to KRW 200,000 (6% of the average wage) for coverage of 70% elderly. Many critics pointed out that the BOAP spreads out resources too thinly over a large segment of the elderly, doing little to help those in near-poverty or in poverty (ESCAP 2015; Jones and Urasawa 2014; OECD 2016).

### ***8.2.5 The Basic Livelihood Security Program (BLSP)***

The BLSP was introduced in 2000 to provide cash and in-kind benefits (e.g., housing and education) to eligible persons living in absolute poverty.<sup>2</sup> In 2011, BLSP benefits were provided to 1.4 million persons (2.8% of the population) including the poor elderly, whereas 7–8% of the population lived in absolute poverty. The BLSP strict eligibility criteria excluded those elderly who had the possibility of assistance from family members (family support obligation rule). This rule was relaxed in 2005, increasing the elderly beneficiary from 6.3 to 6.8% of all beneficiaries. Nevertheless, the current benefit is likely to cover less than 20% of the elderly who live in absolute poverty (OECD 2016).

## **8.3 Trends in Income Sources of the Elderly in Korea**

While Korea's public pension system is still maturing in terms of its coverage and adequacy of benefit levels, public pensions are gradually becoming an important source of income for the elderly. On the other hand, traditional support from family members has been decreasing, along with declines in multigenerational co-residence patterns. Table 8.2 presents changes in the main sources of income of the elderly (aged 65 and older) over time.<sup>3</sup> In 1980, three-quarters of the elderly reported support from their children as the main source of income; this proportion has declined to less than one-third (31%) by 2003. The proportion of elderly citing public transfers as their main income source was only 2% in 1980, whereas about one-quarter of elderly in 2003 mentioned public transfers—consisting of public pensions and public assistance programs—as the main income source. The share of elderly reporting asset income as the main source remained relatively small at around 10% as of 2003. Importantly, the elderly relying on income from employment (or businesses) has been increasing, from 16% in 1980 to 30% in 2003, suggesting that continuing labor force participation has become an important

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<sup>2</sup>Absolute poverty is defined as an income below the minimum cost of living, which is set by the government as 40% of the national median income.

<sup>3</sup>As these are taken from different studies that are based on different survey data, the precise magnitude of changes needs to be interpreted with caution.

**Table 8.2** Trends in main sources of elderly income in Korea (Age 65 and older)

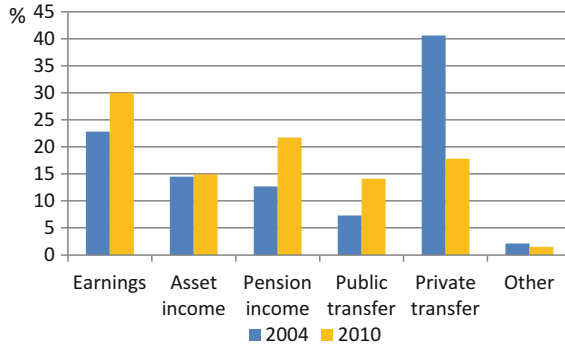
Income sources	1980	1995	2003
Labor (wage, own business, etc.)	16.2	26.6	30.4
Property (rent, asset income, private pensions, etc.)	5.5	9.9	9.9
Private transfers (support from children and others)	75.6	56.6	31.4
Public transfers	2.0	6.6	25.6
Public pensions, social insurance	0.8	2.9	10.6
Public assistance	1.2	3.7	15.0

Source: Kim (2010)

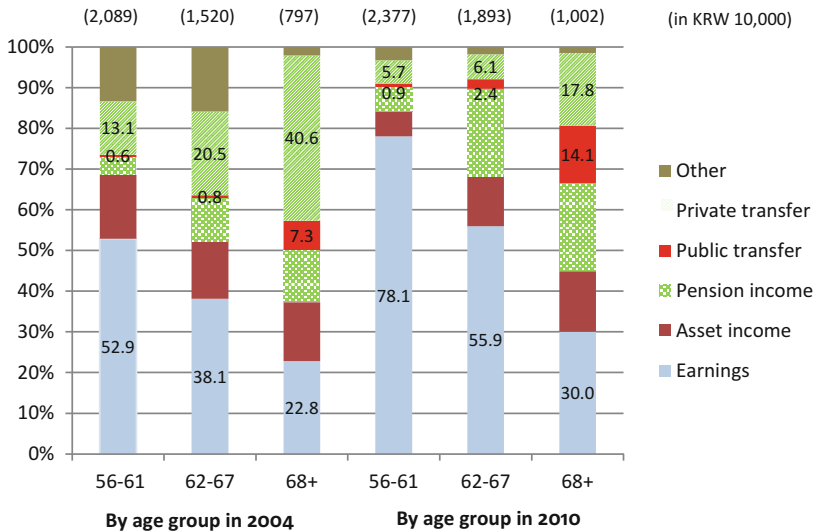
means to support old age. This trend in income sources of the elderly very much reflects changing expectations among the elderly for old-age support.

A more recent study of income sources among the elderly further highlights the increasing importance of pension income and a decreasing share of private transfers (mostly from children) (Kim 2014). Figure 8.4 shows the proportionate share of varying sources of annual income in 2004 and 2010 among the elderly aged 68 and older. The average annual income for the elderly increased from about KRW 800 thousand to KRW 1000 thousand (in 2010 constant price) between the two cohorts. In addition to the overall income level, the two cohorts are set apart in their sources of income. Public pensions, which accounted for 13% of the overall elderly income in 2004 increased to 22% in 2010, whereas the share of private transfers declined sharply from 41 to 18%. For a more recent elderly cohort, public assistance income also has become an important source of income, as well as income from employment. In other words, the decreasing share of private family support for the elderly is now accounted for by public pension, assistance programs, and own earnings.

The extent to which Korean elderly people rely on different income sources, however, varies by age group and by income level. For those in the ages of mid-50s, earnings expectedly make up the largest share of their income, while that share decreases as they get older. As they move into the 60s and the 70s, the proportionate share of their income from pensions, public assistance programs, and private transfers increase. While this pattern seems similar for different cohorts of elderly people as they further age, a clear divergence has also emerged among elderly cohorts in recent years. As shown in Fig. 8.5, for the earlier elderly cohort (aged 68 and older in 2004), private transfers still made up the largest share of their income (41%), followed by earnings (23%). For a more recent cohort (aged 68 and older in 2010), earnings accounted for the largest share of their income (30%), followed by pension income (22%). These changes both across time and across different cohorts illustrate significant shifts in income security for the elderly in Korea, particularly in the roles of pensions, private transfers, and earnings: while pension has become an important income source, earnings have also become critical for retirement well-being. And private transfers from children no longer seem to play the major role for elderly income security.

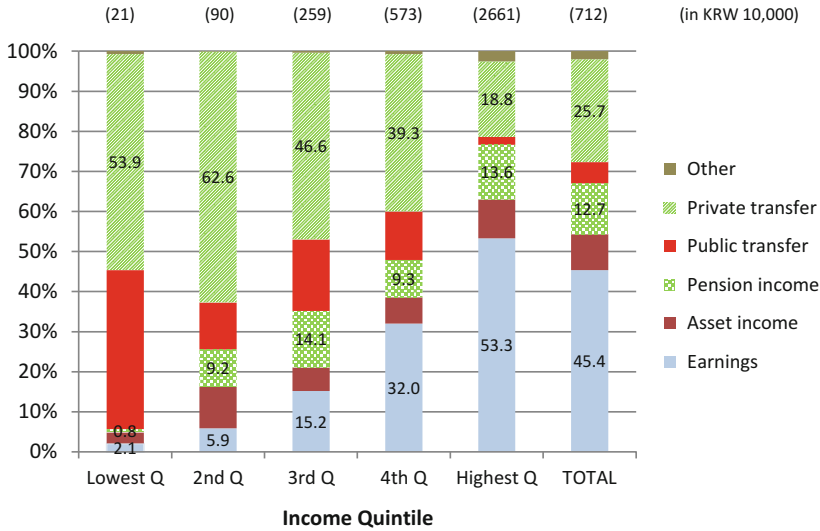


**Fig. 8.4** Shares of varying sources of elderly income in 2004 and 2010 (age 68 and older). *Source:* Based on Table 2.4 from Kim (2014)



**Fig. 8.5** Shares of varying sources of elderly income in 2004 and 2010 by age group. *Note:* The numbers in parentheses indicate average annual income in KRW 10,000 (in 2010 constant price). *Source:* Based on Table 2.4 from Kim (2014)

By income quintile, available analysis comes from the Korean Longitudinal Study of Ageing, which was conducted in 2006. While the elderly cohort covered in this study may not have as wide access to pensions as cohorts in later periods, the 2006 study nevertheless illustrates differing roles of income sources among the elderly by income quintile. As shown in Fig. 8.6 for the elderly aged 65 and older in 2006, the share of earnings in the overall income was greater for those in higher income quintiles, increasing from 2% for the lowest income quintile to 53% for the highest income quintile. Pensions—albeit still a relatively smaller share for the



**Fig. 8.6** Shares of varying sources of elderly income in 2006 by income quintile. *Note:* The numbers in parentheses indicate average annual income in KRW 10,000 (in 2005 price). *Source:* Based on Table 7.23 from Kim (2010)

elderly in general in 2006—also accounted for a larger share of income for those in the highest income quintile. In particular, occupational pensions were a significant source of income for those in the highest income quintile, whereas national pensions were an important source for those in the middle income quintile. This suggests that those who were eligible for occupational pensions—which had been available for only a few selected occupations like civil servants and teachers with generous benefits—were considerably better off in their retirement. For lower income groups, private transfers made up a relatively larger share of overall income—close to or more than half of their income—even though their nominal amounts were significantly less than the amounts for higher income groups. In fact, for those in the lowest income group, they had very few income sources other than financial help from their children (54%) or public welfare benefits (40%). For this pattern of relationships, we should keep in mind that age is likely to be a significant confounding factor: that is, the older elderly are likely to be poorer, as they are less able to earn additional income from employment or other businesses.

The analysis in this section highlights that national pensions have become a crucial source of retirement income for Korean elderly, even though they became mandatory relatively recently. At the same time, traditional financial support received from children is decreasing rapidly, although they still play an important role, especially for those in older groups or lower income groups. The role of pensions is growing fast—in terms of its coverage and its share of overall income. Yet its inadequacy in coverage and benefit levels is attested by the rising importance of labor earnings for retirement security. Welfare programs to some extent

help some elderly to stay out of poverty, but a high rate of elderly poverty illustrates that currently available income sources for the elderly continue to be far short of guaranteeing minimum living standards above the poverty line. Below, we examine the status of employment among the elderly, and explore what policies and measures can facilitate elderly employment.

## 8.4 Employment Trends Among Older Workers

As people live longer and healthier, working after retirement ages is becoming more common. In Korea, given a high likelihood of poverty among the elderly coupled with limited pension benefits, employment has become a necessity for many to support retirement. According to the 2016 supplementary results from the economically active population survey, 61% of older persons aged 55–79 (74% of men and 50% of women) desired to continue working and their main reason for working was “to support their living expenses” (Statistics Korea 2016e).<sup>4</sup> The desired maximum working age was 72 years on average.

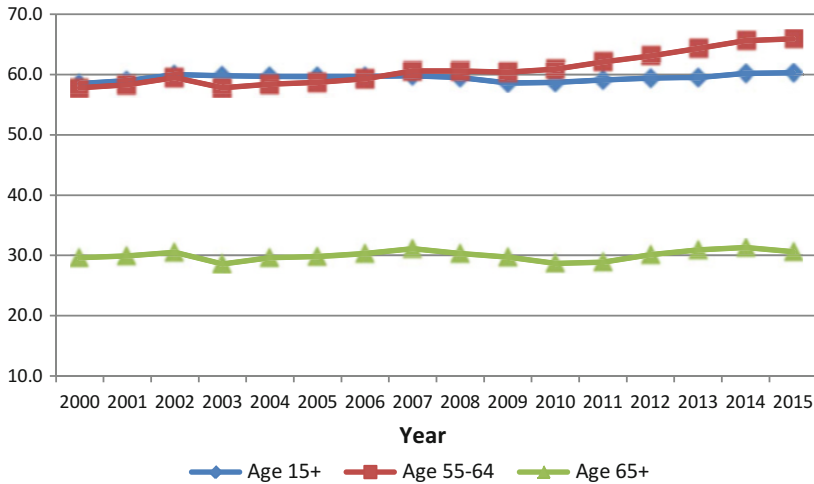
Employment trends in Korea show that not only the proportion of older workers in the labor force has increased as a result of population ageing, but the employment rate has also been rising among the older population. Between 2000 and 2015, the number of employed people has increased from 21.2 million to 25.9 million, while the number of employed people in the ages of 55 and older has doubled from 3.2 million to 6.4 million. This means that older workers aged 55 and above accounted for nearly two-thirds of increases in the overall employed during the past 15 years. This is in part due to population ageing, but the trend reveals that employment has indeed been increasing among the older population. As shown in Fig. 8.7, the overall employment rate in the population aged 15 and above has remained stable at around 60%. Yet, employment among those aged 55–64 has increased from 58% in 2000 to 66% in 2015. The increase was especially salient among men, from 69% to over 78%, whereas women’s employment rate has been steady around 49%. For those aged 65 and older, the employment rate has fluctuated at around 30%; this rate represents one of the highest rates for those aged 65 and older among OECD countries (OECD 2016). Given the large gender gap in labor force participation among the overall population, the gender difference among the older population is not so surprising. What is evident is an increasing trend of continuing employment or re-employment among men of this age group, considering the average retirement age of mid-50s in Korea, as discussed below.

In Korea, people generally retire from their main job at the average ages of 53–55, many of them without adequate preparation for old age. Relatively early retirement

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<sup>4</sup>The breakdown by age group is not available for this statistic in published results. It is likely that the percentage is higher for those in 50s and 60s who were currently in the labor force than that for older age groups.





**Fig. 8.7** Employment rate by age group in Korea, 2000–2015. *Source:* Statistics Korea, Various years. *Economically Active Population Surveys*

for Korean workers is associated with contractual mandatory retirement and seniority-based wage system. While the mandatory retirement age varies from occupation to occupation (e.g., 65 for university professors, 61 for teachers, and 60 for civil servants), many are also forced to retire before their retirement age, particularly in their 50s in the private sector, through “honorable retirement” and “early retirement” (Klassen 2012). As wages are set based on seniority in most firms (where wages continuously increase with job tenure),<sup>5</sup> early retirement of ageing workers reduces costs for firms and creates lower-cost opportunities for younger workers. However, this early retirement generates high vulnerability for older workers, as many are not likely to have saved sufficient resources for retirement, may not yet be eligible for pensions, or their pensions are not adequate enough even if they are eligible. As noted earlier, most regular workers in the private sector are likely to receive lump-sum retirement allowances, which are often used for children’s education or other consumption purposes rather than for retirement savings.

After early retirement, many seek re-employment but employment at this stage tends to be in low-quality jobs (MOEL 2014; Kim 2010; Park 2014). Many become self-employed and temporary employment is also common: nearly a quarter of workers aged 55–64 have less than 6 months of job tenure, compared to less than 6% in the OECD average (OECD 2016). As a result, for the re-employed, the average salary is about one-third of long-term employed workers (Park 2014). Data on older people’s employment show that their increasing presence has varied by industry: the largest increase of older workers between 2004 and 2012 was seen in manufacturing,

<sup>5</sup>A government survey in 2012 shows that all firms use seniority in setting wages, although 60–70% of firms also use other criteria such as individual performance and job status (OECD 2016).

construction, transportation, accommodation and food services, and health and social work. In the transportation industry, older workers aged 55 and older used to account for about 15% in 2004, whereas the proportion more than doubled to 31% by 2012. For these industries, wage levels are lower for older workers than those for core workers in the ages of 30–54 (Lee 2013), suggesting that older workers are likely to be re-employed workers occupying temporary positions.

To facilitate and promote the employment of older workers, the government has proposed and/or implemented several policy measures. The mandatory retirement age must be at least 60 for firms with 300 workers or more, beginning in 2016, and this requirement is to be extended for smaller firms from 2017. The “wage peak” system has been promoted by the government and is being adopted by firms, which freezes or gradually reduces wages for workers during later career years prior to retirement, in order to reduce burdens on firms from continuous rises of wages. This is intended to foster continuous employment of older workers, instead of being forced out with “honorary retirement.” The proportion of firms adopting such a wage-peak system is increasing from 9% in 2009 to 21% in 2015, even though workers have opposed the system, preferring seniority-based wages (Klassen 2012; OECD 2016). Other measures include the increased provision of life-long learning opportunities for older workers to learn new skills. The share of older workers (age 55–64) who participated in formal or non-formal education and training in Korea is lower than the OECD average (21% versus 30%), suggesting low productivity of older workers which need to be improved. The OECD report (2016) calls for increasing the productivity of workers through training, breaking down barriers on dualism in the labor market, and bringing wages and productivity more in line for labor market flexibility.

## 8.5 Conclusion

Korea’s population ageing is progressing in an unprecedented pace, much faster than any other country had undergone in the past. This process is accompanied by a significant shift in traditional social norms on familial support for old age, as demonstrated by dwindling multigenerational living arrangements and old-age financial support from children. Although Korea’s old-age pensions have been established or restructured relatively recently, they are becoming a major income source supporting retirement. However, the high poverty rate among the elderly—one of the highest in OECD countries—clearly shows that the current income support system for the elderly, especially pensions, is far from adequate to support a decent living at old age.

To reduce high poverty among the elderly, priorities can be placed on improving and strengthening the basic old-age pension and the basic livelihood security program, with better targeting and adequate benefits to ensure minimum levels of income. More importantly, the national pension scheme (NPS) should be strengthened to expand its coverage and ensure contributions from all working males and

females. Considering the rapid expansion of eligible pensioners in the near future, careful policy measures need to be implemented for the sustainability of NPS fund, which will include raising the pension eligibility age (from 61 to 65) and reducing the replacement rate. Given the declining role of private transfers, however, lowering the replacement rate of NPS should be accompanied with rigorous emphasis on private savings and early planning for retirement.

Along with strengthening the NPS, concerted efforts will be needed to foster the continuous employment of older workers and postpone retirement. This may require not just the wider adoption of a wage peak system in Korean firms, but also improved working conditions for older workers, the expansion of life-long learning or re-skilling opportunities for older workers, and a more rationalized work distribution among workers of different ages on the part of employers. Deferred retirement and pension benefits should also provide incentives for older workers to stay in the labor force with higher rates of benefits later on, while their continuous contributions help the sustainability of the pension fund. Finally, with the shrinking working-age population in the near future, employment of older workers should be seen as a necessity in addressing labor shortage, as well as for enhancing their retirement security.

This chapter focused on reviewing recent data and research to understand the income security of elderly people in Korea, given the rapid rise of elderly population amidst of a still immature public pension system. For this focus, limited attention has been paid to potential gender differences in elderly living arrangements or varying incomes sources at retirement, as they will require extensive gender analysis and discussions. Given traditional social norms on women—as the main caregiver for the family and children—on the one hand, and the recent growth in women’s labor force participation on the other hand, it will be important to consider in future studies whether women’s retirement security significantly diverges from men’s, and if so, how and why. For instance, it will be important to examine whether gender differences in labor force participation or types of employment also influence gender differences in pension eligibility, benefits, and ultimately retirement security. Such studies will help advance our understanding of the impacts of population ageing in Korea.

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# Chapter 9

## Shrinking Smart: U.S. Population Decline and Footloose Human Capital

Rachel S. Franklin

### 9.1 Introduction: The Case for Evaluating Urban Decline from a Human Capital Perspective

This chapter engages with one aspect of urban demographic change: how population loss and age structure within cities are related to an important driver of economic development: human capital accumulation. The impacts of demographic change will vary, depending on spatial scale of analysis, the drivers of change, and how population characteristics evolve as the change occurs. Where the latter is concerned, human capital stocks may be particularly sensitive to population change, especially loss. This is because higher educational attainment is associated with increased propensity to migrate and, in a context of local population loss, those with more human capital at their disposal are more likely to possess the necessary information, financial wherewithal, and agency to be able to leave. Pull factors are also involved, as growing, thriving locations seek to attract human capital from other locations. The sub-national competition for human capital, in the U.S. and elsewhere, thus plays out against, and contributes to, a backdrop of overall population change. This suggests that evaluations of area “health” or vitality, often measured most simply in terms of the population growth rate or increases in human capital stocks, might benefit from considering both simultaneously. Shrinking places that continue to grow their highly educated populations may be fundamentally different, especially from a responsive policy perspective, from those declining places that are also shedding one of their most important resources: human capital.

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The U.S. city scale offers a fruitful avenue for investigation of the interplays between population loss and human capital stocks. Although population loss affects a variety of types of areas in the United States, from rural to urban and from localized to more regional in scope, cities are the scale at which policy responses to decline have been best articulated. Perhaps because the country as a whole continues to grow, responses to depopulation or ageing at the national level have been muted. In addition, although cities are not the sole producers of human capital in the U.S., they are the main consumers. Cities are not only magnets for the highly educated, they are often ranked based on their ability to attract and retain those viewed to have the most choice in where to live, the college educated. Cities offer a unique intersection of urban competition for human capital and policy responses geared at coping with population loss.

There are two additional aspects of cities, population decline, and human capital that render this a topic worth pursuing. First, population loss is often associated with an aging process; below replacement-level fertility and selective out-migration tend to make places older. Age structure in turn influences human capital stocks. The share of the population earning at least a college degree has increased over time, such that demographically older places also tend to be less educated places. Since age and education are also implicated in the decision to migrate, multiple forces are simultaneously at work in determining any given city's levels of human capital.

Second, cities are also the focal point for population decline-related policy in the United States. One main stream of policy development is so-called "right-sizing" or "smart shrinkage," which focuses on policies that adapt a city's size (and infrastructure and services) to fit the current and future population and not the larger population of the past (Hollander and Németh 2011). These policies prioritize quality of life over the attraction of new inhabitants. This policy approach originates from planning and focuses on aspects of the built environment. Arguably, a complementary indicator of city health or quality of life would be measures of human capital stocks or intensity, as labor forms a key building block for existing and future quality of life and development. A city's ability to retain or attract the college educated—footloose human capital—can be viewed as a form of revealed preference of city inhabitants.

The main argument this chapter makes is that pure measures of population change alone are insufficient to judge the vitality of a city. And although implementation of "smart shrinkage" policies might serve as one sign of a city's commitment to quality of life in the face of depopulation, measurements of human capital stocks offer other advantages. Cities that maintain or increase their human capital stocks in the face of population decline may possess unobservable advantages. Because evaluation of urban population decline through a human capital lens is unusual, the goal of this chapter is to offer some introductory thoughts on the interactions between urban population change and human capital, and, using the U.S. as a case study, to identify declining cities that continue to accumulate human capital. A point of comparison is growing cities facing losses in human capital stocks.

This chapter's contribution can be thought of as a "proof of concept." Through descriptive statistics, it offers an initial and exploratory analysis of the interaction between human capital stocks and urban population change in United States cities. In doing so, the chapter provides some basic facts about these interactions and their

geography and also highlights conceptual and measurement challenges. The discussion highlights the value of considering the characteristics of those living in shrinking and growing cities—especially where education is concerned—and aims to enrich current conceptualizations of the urban shrinkage measurement and policy response. The remainder of the chapter is organized as follows. Section 9.2 provides some background, discusses related literature, and frames the analysis. Following that, data and methodology, along with background on recent population change and educational attainment in the U.S., are covered in Sect. 9.3. Section 9.4 contains results and discussion and the chapter closes with conclusions and policy recommendations in Sect. 9.5.

## 9.2 Urban Population Loss: Some Context

Spatial scale provides an important key to understanding the pervasiveness, importance, and impacts of population loss. At the global scale, of course, population continues to increase, due to continued above-replacement level fertility rates in many parts of the world, along with increased life expectancy. At the national level, many developed countries, such as Japan or Germany, are already confronting population loss and its attendant challenges (see Reher 2007 for a discussion of the demographic underpinnings of population decline at the national scale). Loss at this level is associated with an ageing of the population that affects labor markets and social policy provision, in particular pay-as-you-go retirement systems and healthcare (Coleman and Rowthorn 2011; Lutz et al. 2003).

At the sub-national scale, rural and urban areas in a large number of countries are affected by population decline. Ageing matters at this more localized scale, as well—area labor markets are likely affected, but so are municipal fiscal solvency, infrastructure provision, and even housing markets (see e.g. Carbonaro et al. 2016; Feser and Sweeney 2003; Franklin and van Leeuwen 2016; Martinez-Fernandez et al. 2012; or Wiechmann and Pallagst 2012). In some countries, loss at smaller spatial scales combines to push national population growth rates into negative territory. In other cases, loss in some parts of the country is more or less balanced out by growth in other areas—such that national statistics mask the extent (and even existence) of decline happening at the local level. The United States offers a case in point. Overall, the country continues to experience robust population growth, with an increase of almost 10% between 2000 and 2010. This growth, however, takes place within a context of significant population redistribution and loss at the local and regional scales—between 2000 and 2010 as well, about one third of U.S. counties lost population, as did 18% of cities of 100,000 and up. In some situations, the difference between population growth and loss can be explained by population characteristics: spatial unevenness in age structure and subgroup fertility rates means that some areas possess more of the “raw materials” for population growth than others (Franklin 2014a; Johnson and Lichter 2008). In general, however, the driving force behind variations in growth rates is internal and international

migration: when areas suffer economically or when cohorts age into retirement (or higher education), individuals are likely to move to other parts of the country, leading to loss for some areas and growth for others (Franklin 2014b). Areas and regions lacking in economic opportunities are unlikely to attract international migrants.

At the scale of the city, research and policy related to population loss encounter two challenges. First, how to measure decline and, second, how to respond to its impacts. The measurement of decline is complicated, with a variety of contributions to the literature seeking to classify cities by extent of decline—where the challenge is to define “extent” (e.g. Beauregard 2009; Short and Mussman 2013). Potential responses to the challenges posed by urban depopulation have emerged from the field of planning. Planning, which emphasizes the deliberate development and organization of the urban built environment, tends to view the impacts of population loss through that lens: numbers and locations of vacant properties; spatial distribution of households and service provision; or redevelopment of newly vacant land. The needs and characteristics of inhabitants are important mainly insofar as they describe the beneficiaries of planning policy. In terms of response to decline, Hollander et al. (2009) note that cities in both Europe and the U.S. have experienced extensive population loss and that the timing is ripe for development of new approaches to what appears to be imminent and irreversible loss. These emerging new approaches, “smart shrinkage” or “right-sizing,” emphasize the ways in which land use and infrastructure can be made to work to the advantage of shrinking cities: the purposeful increase of greenspace and decrease of population density, as well as an emphasis on quality of life and social equity (see e.g. Hollander 2011). Demolition of vacant housing, increases in housing lot sizes, and reconfiguration of infrastructure provision each benefit current residents but also hold the potential to increase the overall attractiveness of a city, perhaps stemming the flow of departing inhabitants and also attracting new ones.

As a product of the planning discipline, it is logical that smart shrinkage should engage primarily with the structure and function of the built environment. A complementary approach—one deriving from the social sciences and, in particular geography and demography—considers the evolving socio-economic and demographic characteristics of those living in cities, both growing and shrinking. If, on the physical side, smart shrinkage allows cities to position themselves for renewed health and vitality, it is demography that provides raw materials in the form of inhabitants, who simultaneously benefit from right-sizing policies and also provide the labor that allows areas to function economically and socially. Cities of all types are regularly evaluated on their ability to attract and retain members of the “creative class.” Although the creative class can be defined in terms of occupation or industry, it can also be generalized to include all those who are college-educated. And whether defined narrowly, in terms of the creative class, or more broadly, the educated benefit the cities they live in in myriad ways: they provide labor of a particular type, they prefer (or even demand) certain types of services and amenities, and their expectations for services and environmental milieu may be higher (Florida 2002; Florida et al. 2008). Research on human capital stocks, as well as



regularly updated rankings of cities' stocks, is thus seeking to increase understanding of the drivers of economic growth but also to find a proxy for urban dynamism.

In addition, the educated tend to be more footloose in terms of location. Where the less educated may be tied to an area, those possessing more human capital have a wider set of options when choosing where to live—they can vote with their feet (Sjaastad 1962; Lee 1966; Plane and Heins 2003; Plane et al. 2005). Certainly in the United States, where students often already migrate for higher education, the race for human capital at the city level has as much to do with attracting human capital as producing it in situ. This in turn has implications for the measurement of urban attractiveness or vitality within the context of urban population loss. Whatever factors are driving decline, whether economic, geographical, or even demographic, those cities that maintain or increase their human capital stocks may be more robust or resilient than their population change figures would otherwise suggest. In the case of economic decline and loss of jobs, at a minimum the possession of stable human capital stocks suggests potential for future growth. It may also mean that there remain strong and valid (and unobserved) economic reasons for remaining in the area rather than moving elsewhere. Likewise, if on the face of it a city's geographical location appears to be driving depopulation, but the educated remain (or continue to arrive), a city's position may be stronger than it first appears. Finally, even in the case of aging and out-migration, if the share of the population with a college degree increases, this is considerably better than the alternative scenario: an older and less educated populace.

### 9.3 Measuring Urban Population Change and Human Capital

To answer questions about the association between human capital stocks and population change in U.S. cities, this chapter employs data for 2000 and 2010 from the decennial census and the 2010 American Community Survey (ACS) 1-year sample. The ideal approach to studying demographic characteristics and population change would be to employ individual level migration data for U.S. cities. This would permit researchers to study how characteristics of in- and out-migrants are related to areal population loss or growth. Unfortunately, for the U.S., such data do not exist for the desired spatial and temporal scales. Instead, the units of observation are all cities with at least 100,000 inhabitants in 2010 and the variables of interest are aggregated measures for these cities. Of the 277 cities included in the sample, 49 experienced some degree of population loss between 2000 and 2010. Table 9.1 provides basic information about the sample. Relatively few cities in the U.S. are over one million inhabitants; the bulk of the cities included in the analysis range between 100,000 and 249,999 inhabitants. In addition, although on average these cities grew faster than the U.S. as a whole, the average rate of growth differed considerably by class size of city, with a fair amount of variation around the

**Table 9.1** City sample and population change

City size (Population, 2010)	Average population change (St. Dev.), 2000–2010	Fraction experiencing decline, 2000–2010
Total (277)	17.95 (48.58)	0.18
>1,000,000 (9)	4.32 (6.51)	0.11
500,000–999,999 (23)	9.89 (12.97)	0.17
250,000–499,999 (40)	7.91 (15.48)	0.30
100,000–249,999 (205)	21.41 (55.49)	0.16

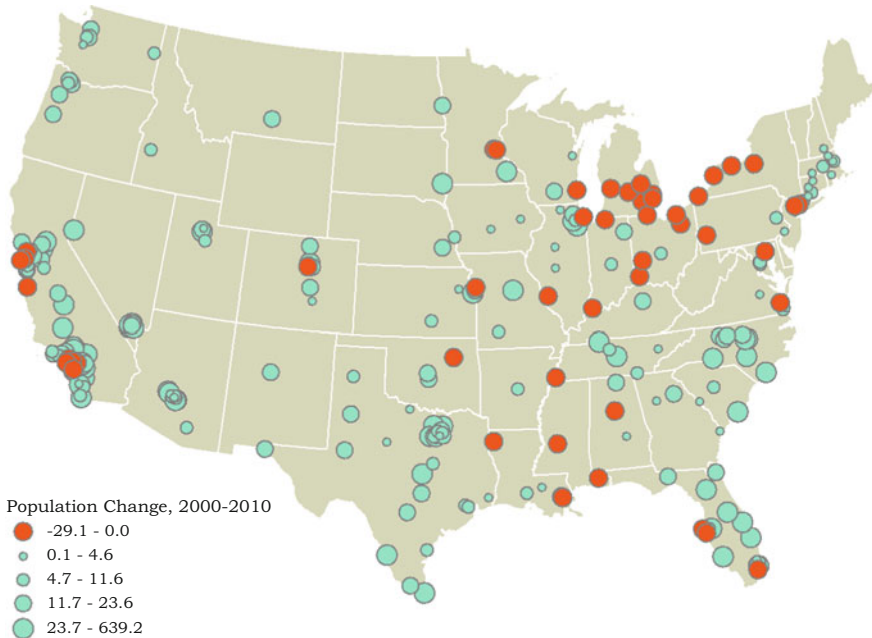
Count of cities in each category provided in parentheses. Population change figures represent average change across cities in each category

mean. The fastest growth on average, 21.41%, was in the smallest category of city, while the largest nine cities in the U.S. grew on average by only 4.32%. The right column of Table 9.1 shows the share of cities in each category that lost population during the study period. Of the 277 cities considered here, 18% lost population. In the largest-city category, only one city lost population: Chicago, Illinois. The category most impacted by population decline was the 250,000–499,999 range, with almost a third of cities reporting fewer residents in 2010 than in 2000.

Figure 9.1 shows study city locations in the contiguous 48 states.<sup>1</sup> Larger U.S. cities are located across the country, with several larger cities often co-located in the same larger metropolitan area (e.g. around Dallas, Texas or Los Angeles, California). Broadly speaking, three geographical types of shrinking city can be identified from the map: those cities in the deep South, those in the Rustbelt of the Midwest, and those cities—located mainly in very large conurbations such as San Francisco or Los Angeles—nestled close to other cities, which are growing. On the whole, cities located in the West and in the Atlantic South tended to experience population growth during this period.

Human capital is often measured in terms of the educational attainment of the adult population. This analysis uses the share of the population in a particular age category that has at least a bachelor's degree. The share is calculated for 2000 and 2010 and then differenced, yielding a percentage point change in human capital intensity (that is, the share of the population that is educated). As discussed above, ideally, individual-level migration data would be used to connect city characteristics (whether population decline or other city aspects) and human capital stocks. This would make it more straightforward to explain how a city's attractiveness draws or repels individuals with particular characteristics. Unfortunately, such data are not available for U.S. cities for the desired time period and so inferences must be drawn from aggregate changes in population characteristics—here, educational attainment—over time.

<sup>1</sup>The only city in the sample not located in the contiguous 48 states is Anchorage, Alaska.



**Fig. 9.1** City location and population change, 2000–2010. *Data source:* U.S. Census Bureau

Educational attainment tabulations in the U.S. generally use the population 25 and up with at least an undergraduate degree—with 25 being the age at which most individuals will have completed at least their first degree. Although it is typical for city rankings and research in the U.S. to employ the standard 25 and up measure of educational attainment, this statistic alone is not ideal, as it is dependent on the age structure of a given city’s population. In most developed countries, and the U.S. is no exception, educational attainment has tended to increase over time. That is, younger generations are more likely to possess a college degree. The oldest age cohorts, conversely, are much less likely to have achieved this qualification. According to the 2000 decennial census, for example, 27% of 25–29 year olds had earned at least a college degree, compared to 20% of 60–64 year olds (U.S. Census Bureau 2000). Cohort differences in educational attainment mean that cities with larger elderly populations, for example, are likely to have smaller total shares of the adult population who are college educated, holding other factors constant. The reverse is true for newer, younger cities—these places will appear more educated than their older peers, simply because young people are more likely to be college educated.

An additional wrinkle is introduced into the measurement of human capital stocks when computing change over time. This is because the same individuals are not being measured in both points in time; rather individuals will have aged into the next cohort above. Put simply, when comparing 25–29 year olds in two time periods for a city, an increase in the share of the group with a college degree *should*

**Table 9.2** Educational attainment by age, United States and cities of at least 100,000 in 2010

	U.S. total	Cities (100k+)				
	2000	2010	Percentage point change	2000	2010	Percentage point change
Age 25 and up	24.40	28.1	3.7	26.38	29.84	3.5
Age 25–34	27.54	31.1	3.6	28.84	32.31	3.5
Age 35–64	26.17	29.5	3.3	27.68	30.30	2.6
Age 65+	15.39	21.3	5.9	17.50	23.86	6.4

Educational attainment is measured by the percent of the population in that age group possessing at least a bachelor's degree. City values presented are mean percentages for the 277 cities with at least 100,000 population in 2010

*Data source:* U.S. Census Bureau

be observed, purely due to increases in college attendance over time for younger cohorts. The same will be true for the entire 25 and up population: between the two time periods, the older, less educated population will age out of the system, to be replaced by younger, more educated individuals.

For the purposes of the present analysis, educational attainment for the total adult population (25 and up) is employed, but cohort level changes are also included, in order to minimize the influence that temporal increases in educational attainment as well as age structure are having on results, and to highlight cross-cohort differences in human capital accumulation. Table 9.2 shows educational attainment in 2000 and 2010 for the U.S. and for the largest cities. Three trends are immediately apparent. On average, cities are more educated than the country as a whole. Second, both the nation and sample cities became more educated between 2000 and 2010, which is to be expected. Third, and also expected, for both geographies and time periods, larger shares of younger age cohorts are educated than older age cohorts.

Just as city size and population change are related (Table 9.1), so too are city size and human capital stock changes. Table 9.3 provides percentage point changes between 2000 and 2010 in the share of the population with at least a college degree. For the total adult population, the data indicate that smaller cities showed smaller average increases in human capital stocks—increases that were smaller than change at the national level. Of course, as noted above, this is at least partially due to age structure and changes over time in the propensity to earn a college degree. Cohort-level changes show a more nuanced association between city size and increases in human capital stocks. The 25–34 age cohort—of particular interest because they represent quintessentially footloose human capital, in that they are less likely to be married and to have children, and so are most likely to be able to “vote with their feet”—shows average increases higher than the national norm for the three larger categories of cities. The largest cities showed a particularly sizable increase in the share of this cohort with a college degree. Where the 65 and up age cohort is concerned, only the 250,000–499,999 category had increases that were slightly

**Table 9.3** Percentage point change in educational attainment, 2000–2010, by city size

Change 2000–2010	City size (Population, 2010)			
	100,000–249,999 (N = 205)	250,000–499,999 (N = 40)	500,000–999,999 (N = 23)	1,000,000+ (N = 9)
College-edu- cated 25+	3.33	3.58	4.24	3.98
Age 25–34	3.23	3.64	4.26	6.14
Age 35–64	2.48	2.83	3.54	2.35
Age 65+	6.50	5.78	6.18	5.96

Population change figures represent average change across cities in each category

*Data source:* U.S. Census Bureau

smaller than the national increase. Although these larger increases could be attributable to in-migration of retirees, in truth the bulk of the shift is probably due to higher educational attainment of those aging into the oldest cohort.

## 9.4 Changes in Urban Human Capital Stocks in the Face of Population Decline

To explore the connection between population change and educational attainment in larger U.S. cities, this section first assesses macro-level associations across different city size classes and geography, and then turns to the experiences of the largest cities, as well as those that experienced the most population loss between 2000 and 2010. In each case, overall educational attainment for the adult population (i.e. those 25 and up) is considered, along with cohort-level changes.

Decreases in the share of the adult population with a college degree are rare, whether a city grew or shrank between 2000 and 2010 (Table 9.4). When the educated share decreased, in fact, it was more likely to be observed in a growing (12 cities) than a shrinking (3 cities) city. These growing cities are likely those whose growth is fueled by in-migration (or retention) of adults without college degrees. Far more common is the case of declining population, with continued increases in terms of the share of the population that is educated. That is, for the population 25 and up, a city's population loss does not appear to impact its human capital stock *intensity*. Relative impacts may be much more substantial, of course, when other cities are experiencing much larger increases in educated shares. Across city size categories, shrinking cities in the three larger categories all had larger shares of the adult population with a college degree at the end of the study period. The three shrinking cities with declining human capital stocks appear in the smallest category (100,000–249,999).

Focusing on the entire population 25 and up obscures important differences that may exist across age cohorts. As a younger and more recently educated group, the 25–34 age cohort, for example, could be expected to be more sensitive to

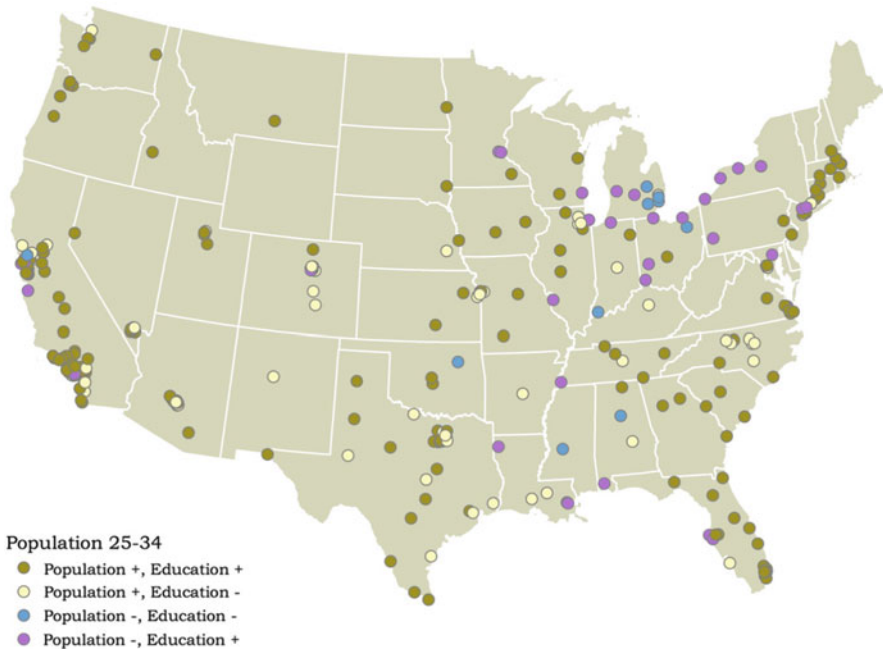
**Table 9.4** Population/education growth interaction, by age cohort and city size

City Size:	Pop +, Ed +	Pop +, Ed -	Pop -, Ed -	Pop -, Ed +	Total
25 years and up					
>1,000,000	8	0	0	1	9
500,000–999,999	19	0	0	4	23
250,000–499,999	26	2	0	12	40
100,000–249,999	161	12	3	29	205
Total	214	14	3	46	277
Ages 25–34					
>1,000,000	8	0	0	1	9
500,000–999,999	16	3	1	3	23
250,000–499,999	20	8	1	11	40
100,000–249,999	124	49	9	23	205
Total	168	60	11	38	277
Ages 35–64					
>1,000,000	6	2	0	1	9
500,000–999,999	18	1	0	4	23
250,000–499,999	25	3	0	12	40
100,000–249,999	131	42	12	20	205
Total	180	48	12	37	277
Ages 65 and up					
>1,000,000	8	0	0	1	9
500,000–999,999	19	0	0	4	23
250,000–499,999	28	0	1	11	40
100,000–249,999	163	10	1	31	205
Total	218	10	2	47	277

*Data source:* U.S. Census Bureau

population decline and its proximate causes. They might be more likely to move for suitable employment and also to exercise their preferences for certain types of urban amenities that might be less evident in a shrinking city. Thus, policies that succeed in retaining these individuals are especially desirable for shrinking cities. Members of this cohort are not only more likely to be educated than older cohorts, but are also very likely to eventually form households and have children. That is, by remaining in shrinking cities, this group contributes human capital, but also potentially, and importantly, children.

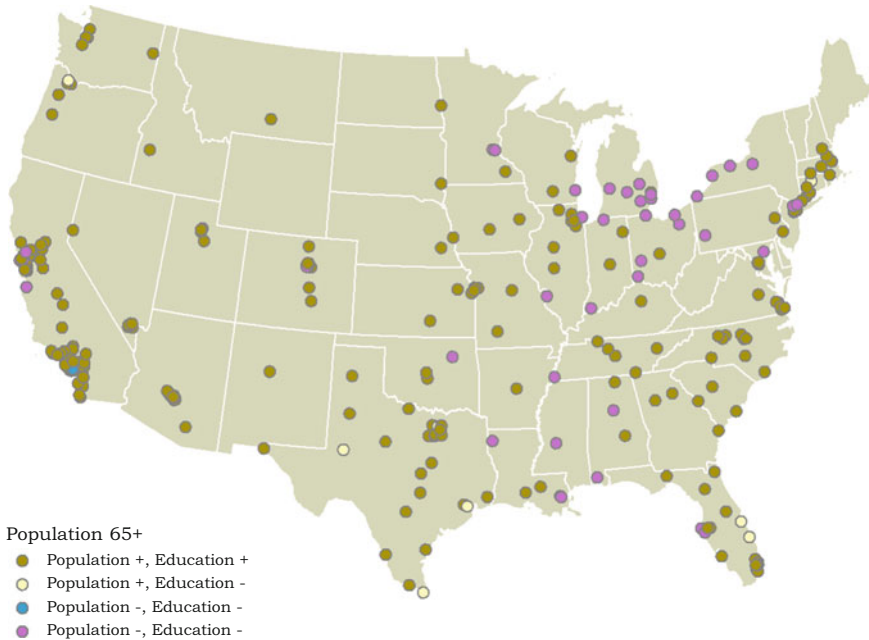
Table 9.4 indicates, that, compared to the total adult population, there were more shrinking cities that also experienced a loss in the share of educated individuals in this younger age cohort. Of the 11 cities that experienced a decline in educated youth stocks along with overall population loss, 9 were in the smallest city size category. Much more common (38 cities) was for cities to experience decline but to continue to accrue human capital in the 25–34 age group. Interestingly, a sizable share of growing cities saw decreases in the share of their young people with at least a college degree during this period. This could indicate cities that are growing quickly



**Fig. 9.2** Interaction between population change and change in the share of 25–34 year olds with a college degree, 2000–2010. *Data source:* U.S. Census Bureau

overall—through natural fertility and in-migration of younger people—without adding hallmarks of urban development such as jobs or amenities. Or these cities could be adding substantial numbers of 25–34 years olds, most of whom do not have a college education, thus diluting the share of the entire cohort that is educated. Where geography is concerned, it might seem logical that growing or shrinking cities with declining shares of youth human capital might tend to be located in particular parts of the United States. This does not appear to be true (Fig. 9.2). In fact, the dominant determinant, from the factors considered here, appears to be city size: decreases in youth human capital are evident throughout the country but in general tend to be smaller cities.

For older age cohorts, the pattern is similar. Shrinking cities may face many challenges, but human capital attrition does not appear to be one of them. The 35–64 cohort—prime working ages—was more educated in 2010 than in 2000 in over two thirds of the cities, whether they were growing or shrinking. As with the younger cohort, declines were more likely in growing cities than in shrinking cities and were found in each city size category. The decline-decline combination—in both population and the share of the population with a college degree—occurred only in the smallest category of cities. In the case of the oldest age cohort (65+), those at or above retirement age became more educated between 2000 and 2010; in only 12 of the sample cities was there a detectable decrease in the share of their population that was educated, and this was predominantly in growing cities, not



**Fig. 9.3** Interaction between population change and change in the share of 65+ year olds with a college degree, 2000–2010. *Data source:* U.S. Census Bureau

shrinking. Given the sharp increase over time in university attendance, it is remarkable that any city should experience a decrease in the share of its elderly population with a college education. For this to occur, the mostly likely scenario would be that any increases due to cohort change (i.e. less educated elderly dying and being replaced by more educated elderly aging into that cohort) would need to be cancelled out by out-migration of the more educated in the cohort. Figure 9.3 highlights the predominance of increases in educational attainment among the 65 and up age cohort. Cities with decreases in shares of educated elderly were located throughout the country, but often in the South, particularly Texas and Florida.

With the exception of New Orleans, Louisiana and Birmingham, Alabama (both located in the South), the cities that experienced the sharpest population losses in the U.S. between 2000 and 2010 were located in what is generally referred to as the American Rustbelt (Table 9.5). New Orleans, which lost almost a third of its population during this period, is an unusual case as its precipitous loss is natural disaster related, being due to Hurricane Katrina and its aftermath in 2005. The relationship between educational attainment and population loss is varied. In some cases, such as New Orleans, Buffalo, or Pittsburgh, population decline is paired with notable increases in the share of the population with a college degree. For Pittsburgh and New Orleans, increases in human capital intensity are apparent across all age cohorts, whereas in Buffalo the increase is highest in the 25–34 age



**Table 9.5** Population change and educational attainment, 2000–2010

City	2010 population	Change, 2000–2010				
		Population (percent)	Percent college educated			
			25+	25–34	35–64	65+
<b>Highest population decline</b>						
New Orleans, Louisiana	343,829	–29.1	7.3	11.2	5.6	6.4
Detroit, Michigan	713,777	–25.0	1.0	–0.2	0.8	3.0
Flint, Michigan	102,434	–18.0	0.1	–0.1	–1.7	5.8
Cleveland, Ohio	396,815	–17.1	1.9	4.0	1.5	1.6
Dayton, Ohio	141,527	–14.8	0.2	5.2	–3.1	3.9
Birmingham, Alabama	212,237	–12.6	1.6	–2.8	2.0	4.7
Buffalo, New York	261,310	–10.7	5.5	11.8	3.2	2.8
Cincinnati, Ohio	296,943	–10.4	4.8	4.0	3.8	8.1
Pittsburgh, Pennsylvania	305,704	–8.6	8.7	7.6	6.6	10.4
Toledo, Ohio	287,208	–8.4	1.6	3.3	0.2	3.5
<b>Highest population growth</b>						
Enterprise, Nevada	108,481	639.2	15.1	11.5	15.1	13.3
Surprise, Arizona	117,517	281.0	8.5	9.9	6.6	11.5
Frisco, Texas	116,989	247.0	6.3	–1.8	12.9	–1.4
Elk Grove, California	153,015	155.1	10.1	12.0	10.3	9.2
McKinney, Texas	131,117	141.2	6.5	2.5	8.9	3.0
Murrieta, California	103,466	133.7	5.2	5.2	6.9	–0.3
Gilbert, Arizona	208,453	90.0	2.0	–1.4	3.6	7.6
North Las Vegas, Nevada	216,961	87.9	5.8	4.1	7.3	1.1
Port St. Lucie, Florida	164,603	85.4	0.5	4.6	–0.4	–0.1
Victorville, California	115,903	81.0	1.9	0.5	1.4	5.7

Data source: U.S. Census Bureau

cohort. These increases could be due to in-migration of the college educated, or higher levels of out-migration of the less educated, resulting in larger shares of each cohort possessing a college degree. The evidence suggests that these cities are in some ways thriving; although they may suffer extensive population loss that almost assuredly impacts the built environment, they possess characteristics that render them attractive to the college educated, especially those in younger age cohorts. This is a sharp contrast to other shrinking cities, such as Toledo, Flint, or Birmingham, which have lost population but also seen human capital intensity decrease or increase only anemically (i.e. at a much slower rate than the U.S. as a whole).

Similar variation in human capital changes can be observed for the fastest growing cities in the U.S., as well. For the purposes of comparison, the bottom panel of Table 9.5 provides cohort level changes in shares of population that are educated for the ten fastest *growing* cities between 2000 and 2010. In many cases, these are cities that barely existed in 2000, especially in the western part of the

**Table 9.6** Population change, 2000–2010, largest cities

City	2010 population	Change, 2000–2010				
		Population (percent)	Percent college educated			
			25+	25–34	35–64	65+
New York, New York	8,175,133	2.1	6.0	9.3	4.2	7.0
Los Angeles, California	3,792,621	2.6	5.2	9.3	3.0	6.5
Chicago, Illinois	2,695,598	−6.9	7.8	11.0	6.4	6.3
Houston, Texas	2,099,451	7.5	1.3	3.4	−0.3	4.1
Philadelphia, Pennsylvania	1,526,006	0.6	4.7	8.2	2.2	4.9
Phoenix, Arizona	1,445,632	9.4	2.2	1.6	2.0	3.9
San Antonio, Texas	1,327,407	16.0	2.1	3.3	1.0	4.2
San Diego, California	1,307,402	6.9	5.3	7.8	3.5	8.0
Dallas, Texas	1,197,816	0.8	1.2	1.4	−0.8	8.7
San Jose, California	945,942	5.7	5.0	4.7	5.5	6.8
Jacksonville, Florida	821,784	11.7	2.7	3.2	1.1	7.9
Indianapolis, Indiana	820,445	4.9	1.3	−1.9	1.7	3.9
San Francisco, California	805,235	3.7	5.9	10.3	4.2	7.4
Austin, Texas	790,390	20.4	3.3	1.5	3.9	6.3
Columbus, Ohio	787,033	10.6	2.6	2.4	2.6	4.2

*Data source:* U.S. Census Bureau

U.S. Some growing cities, such as Enterprise, Nevada or Elk Grove, California manage to pair a population boom with human capital accumulation across all age cohorts. Others, though, such as Frisco, Texas or Gilbert, Arizona, experience population increase but a relative dilution of the share of the population that is educated. That is, cohort size may increase over time, but the share of that cohort that is educated decreases. Taken together, the two panels in Table 9.5 suggest that population growth figures alone are not sufficient to give the full picture of a city's dynamism. Especially where population decline is concerned, considering changes to human capital endowments over time adds a valuable perspective.

A final perspective on population change and human capital comes from the largest U.S. cities. Table 9.6 provides these statistics for the 15 largest cities in the U.S. Of these cities, only Chicago experienced a loss in population between 2000 and 2010. Other cities, however, experienced negligible population increase—Philadelphia or Dallas, for example. On the other end of the spectrum, cities such as Austin, San Antonio, Jacksonville, and Columbus all experienced consider population growth during this period. Chicago, the largest city in the U.S. to experience population loss, still proved itself to be very attractive to the college educated. In each age cohort, the share of the population with a college degree increased more than the national average. Philadelphia, a slow-growing city, also showed itself to be attractive to the 25–34 age cohort, belying any suggestion of moribundity that might arise from its lack of growth. On the whole,

population increase alone does not seem to provide a full picture of the demographic change occurring within a city.

## 9.5 Conclusions: Being Smart About Shrinking Cities

Population decline and its attendant challenges are an increasingly relevant topic in many developed countries, even those, such as the United States, that continue to experience population growth at the national scale. For shrinking cities, one important avenue of research has been, simply: how to respond. Is a return to population growth a realistic goal? If not, what should policy and planning aim to accomplish for these places? The concept of “right-sizing” in planning argues that the best policies are those that help cities adjust to current and future smaller populations. By emphasizing land redevelopment, lower densities, and environmental amenities, places will function better, be more attractive to current residents, and potentially at some future date even attract new inhabitants. This chapter has argued that, while these policies are useful and offer a promising roadmap for shrinking cities the world over, they could be complemented by approaches that consider how the characteristics of those living in shrinking cities are evolving. Quality of life, after all (which right-sizing policies aim to maximize), is mediated by the characteristics of those living in the area—age, for example, is an important determinant of quality of life needs and expectations (Ruth and Franklin 2014). In particular, the human capital characteristics of a city are likely to change as a city shrinks. Those cities that maintain or grow their human capital may have a different path forward than those that are losing this valuable commodity.

This chapter has offered a preliminary assessment of the relationship between urban population loss and human capital stocks in the United States. The main conclusions that can be drawn from this exploratory study fall into two categories. The first is in terms of findings. Because of changes over time in the propensity to obtain a college degree, most places—whether growing or shrinking—should become more educated over time. And, indeed, this analysis finds that most shrinking cities in the U.S. have continued to gain in human capital, as measured by the share of the cohort with at least a college degree. This result, which of course merits further, more in-depth investigation, indicates that many shrinking cities are not as badly off as their population loss statistics might suggest: they still possess a very important raw material in the form of human capital. There are, however, shrinking cities which also appear to be losing their human capital. These cities tend to be on the smaller side and to be located throughout the U.S. If the norm is stability or growth in human capital even in the face of overall population decline, then one conclusion might be that cities such as Toledo, Ohio, which have also lost human capital, face more difficult challenges than cities such as Buffalo, New York, which have depopulated while still accumulating educated individuals, especially in the 25–34 age cohort.

The second set of conclusions that can be drawn from this analysis is methodological. Existing rankings of cities and their human capital stocks tend to ignore underlying demography, especially where educational attainment over time and age structure are concerned. In order to adequately measure the relationship between urban shrinkage and human capital, we need good measures that take into account cohort effects as well as changes to both numerators and denominators. Related to this, how do we generate benchmarks that allow us to identify cities that are outperforming expectations in terms of human capital retention? In the U.S. at least, this challenge is compounded by a lack of good data for small geographical units. Preferably, when cities lose population, it would be straightforward to identify the components of change that are responsible (i.e. natural decrease versus outmigration) and to connect those components of change to the characteristics of those entering and leaving the area.

In closing, although the analysis presented raises a variety of questions, it has also shown that an interesting avenue of research exists in the dual investigation of population loss and human capital stocks. It has also revealed that potential exists for development of models and measures that would increase our knowledge of the interaction of these two important topics. Effective policies that address population loss will benefit from expansion of the range of data inputs, assessments, and outcome evaluations that are employed to include human capital accumulation.

#### Key Policy Recommendations:

- Increased data provision for local areas that permits timely tracking of changes in demographic composition, especially educational attainment.
- Focus on attraction and/or retention of the 25–34 age cohort, as these individuals are entering economically productive ages and are also likely to form households and produce children.
- Continued or renewed allocation of resources to education will help increase attractiveness of shrinking cities but also increase local human capital stocks.
- Expansion of current “smart shrinkage” policy umbrella to include metrics for human capital attraction and retention.

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# Chapter 10

## The Impact of Ageing on Welfare and Labour Productivity: An Econometric Analysis for the Netherlands

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### 10.1 Introduction

Currently, the ageing population is an important policy topic in many Western economies. Ageing may have a negative impact on welfare because of falling labour supply and productivity, rising demand for healthcare and pension provisions, changing housing preferences and so on. Many countries have taken action to overcome the most obvious problems of ageing by raising the retirement age. Increasing the retirement age is one way of maintaining the proportion of the population working and thus limiting the share of retired people in the population.

If no actions were undertaken, the proportion of workers' income being paid to fund old age benefits would rise strongly given the post-World War II birth wave that started to retire in 2011. As a result, workers' net wages would grow less because a rising share of gross wages would be spent on retirement benefits. In other words, the level of welfare, defined as per capita income, would likely grow only slowly or might even fall. There would simply be fewer working people having to pay for more people in retirement. However, raising the retirement age is not the only possible

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response. Other ways to maintain an appropriate welfare are an increase in annual working hours, a rise in the participation rate or a rise in labour productivity.

The Netherlands has a high level of net labour participation (Auer 2000) but a relatively low number of annual working hours, because about 20% of males and 60% of females work part-time. In fact, Statistics Netherlands reports a falling number of annual working hours per employee over the past 20 years. It has even been said that there is a part-time culture in the Netherlands (OECD 2014b, p. 47 and p. 131). As such, a rise in the annual working hours per worker would seem an obvious candidate to maintain the wealth level (see Noback et al. 2014). Another option, the possibilities of which are the topic of this paper, is to increase labour productivity.

It is also relevant to study if the phenomenon of ageing, and its solution in terms of productivity growth, differs by region. Even in a relatively small country like the Netherlands there can be remarkable variations in the age distribution of its population. Here, Statistics Netherlands reports that, in the peripheral provinces of Friesland, Drenthe, Limburg and Zeeland, the ratio of pensioners (65+) to the potential labour population (20–64) is relatively high and will be increasing from  $\approx 35\%$  in 2014 to  $\approx 62\%$  in 2040. In comparison, in the economic core regions, largely comprising the provinces Utrecht, Noord-Holland and Zuid-Holland, the share of pensioners was around 27% in 2014 and is only expected to reach 46% in 2040. As such, ageing in the peripheral provinces will become a bigger problem than in the economic core due to its much faster growth in an ageing population.

Labour productivity, in terms of GDP per hour, is high in the Netherlands, one of the top 10 global countries in terms of labour productivity levels (van Ark et al. 2010, Table 8). However, the growth rate of labour productivity is rather low in the Netherlands (ibid., Table 5). Although the latest economic crisis, together with congestion problems in the core region, may have had a negative influence on productivity growth, these factors are also present in other countries. According to the OECD (2014a), another possible explanation for this slow growth is the Dutch polycentric city structure that spreads agglomeration benefits across a larger number of Functional Urban Areas (FUAs) and consequently concentrates them less in the largest cities. In the five largest functional urban areas in the Netherlands (i.e. Amsterdam, Rotterdam, The Hague, Utrecht and Eindhoven), the agglomeration benefits and labour productivity growth rates are lower than in other OECD FUAs of similar size (more than 500,000 inhabitants). Focusing on the Netherlands, productivity growth is in fact higher in the peripheral areas outside of the economic core (the Randstad). So, as with ageing, there are also substantial regional differences in productivity growth among Dutch regions. Broersma and Van Dijk (2008) and the OECD (2014a) identified a shift in the highest productivity growths from the core towards peripheral regions at the turn of the millennium, a trend that was found in other countries in northwest Europe by Dijkstra et al. (2013). This study will investigate this matter in greater depth using a new and unique micro-level dataset for the Netherlands that relates labour productivity growth in firms to regional characteristics and to those of workers employed within these firms. In this way, we aim to answer the question as to whether the threat of ongoing ageing, that is particularly present in the periphery, can be compensated for by rising productivity growth in these regions.

This paper is organised as follows. First, Sect. 10.2 provides the motivation for this study and relates it to earlier work in this field. Section 10.3 briefly justifies our model specification in the light of other productivity micro-studies. In Sect. 10.4, we formally derive the specification of our labour productivity growth model that is the basis for this paper. Section 10.5 describes the data and databases at the heart of the empirical part of this investigation. Section 10.6 provides our estimations and test results using these data. Finally, in Sect. 10.7, we draw conclusions.

## 10.2 Motivation for This Study

An ageing population poses a threat to Western countries in keeping up their level of welfare. There are naturally differences between countries in the extent to which they face the problem of ageing. Ageing is likely to become a particular problem in countries such as Italy, Spain and particularly Japan. In these countries, the ratio of pensioners (over 65) to inhabitants of a working age (20–64) will ultimately reach 70–80% by 2050. In other countries, such as the USA and Sweden, this percentage will also rise, but to much more manageable levels of around 40% in 2050. Figure 10.1 shows ageing, defined as the population older than 64 as a percentage of those aged 20–64, for the Netherlands, the EU-15 countries and the USA between 1950 and 2050. Figure 10.1 shows that the US level of ageing is far below the EU-15 level. What is most noticeable is that, in the period between roughly 2000 and 2025, the Dutch level of ageing will move from the ‘low’ US level to the ‘high’ EU-15 level. This is a very interesting phenomenon and one wonders if there is a specific reason for this? Perhaps, there are regional differences within the Netherlands behind this rise in ageing. If so, are there any differences in regional productivity growth that might counteract or stimulate this rise in ageing?

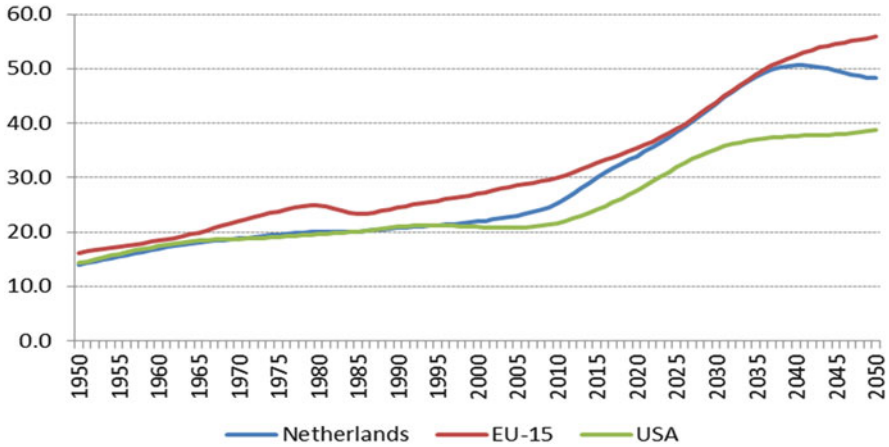
The threat of ageing to a country, in terms of a lower level of wealth, can easily be assessed using the definitional equation below:

$$\frac{Y}{P} = \frac{Y}{H} \cdot \frac{H}{E} \cdot \frac{E}{P_{15-64}} \cdot \frac{P_{15-64}}{P}, \quad (10.1a)$$

where  $Y$  is the real value added,  $H$  is the total hours worked,  $E$  the employed labour force,  $P_{15-64}$  the population of working age (between 15 and 64), and  $P$  the total population. To consider the growth in wealth rather than the absolute level, Eq. (10.1a) can be rewritten as:

$$\begin{aligned} \Delta \log \left( \frac{Y}{P} \right) &= \Delta \log \left( \frac{Y}{H} \right) + \Delta \log \left( \frac{H}{E} \right) + \Delta \log \left( \frac{E}{P_{15-64}} \right) \\ &\quad + \Delta \log \left( \frac{P_{15-64}}{P} \right), \end{aligned} \quad (10.1b)$$



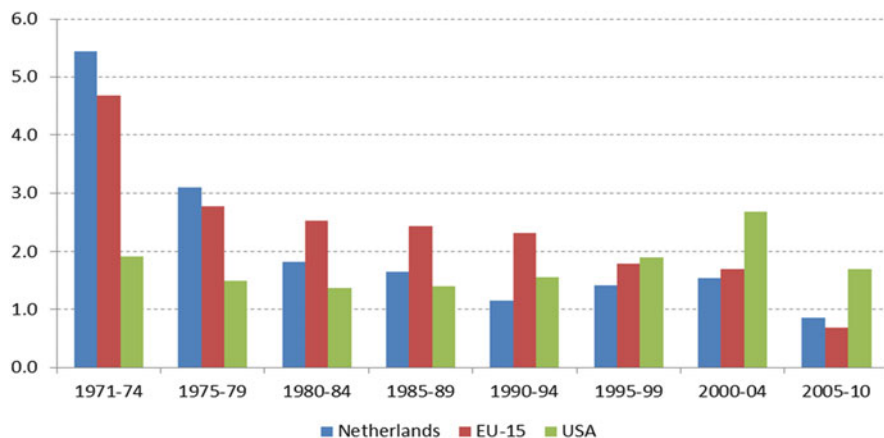


**Fig. 10.1** Ageing: people aged 65+ as a percentage of 20–64 year olds (1950–2050), in the Netherlands, the EU-15 countries and the USA. *Source:* OECD, *Pensions at a Glance 2011: Retirement-income Systems in OECD and G20 Countries*—© OECD 2011

Essentially this states that the growth rate in real wealth, i.e. the log change in per capita real GDP,  $\Delta \log(Y/P)$ , can be decomposed into four factors: (i) change in real labour productivity, in terms of growth in constant-prices GDP per hour worked,  $\Delta \log(Y/H)$ , plus (ii) the change in the number of hours worked per employed person,  $\Delta \log(H/E)$ , plus (iii) the change in net labour participation,  $\Delta \log(E/P_{15-64})$  plus (iv) the change in the population share of working age,  $\Delta \log(P_{15-64}/P)$ . Any increase in immigration is likely to affect the latter two factors via rising  $P$  and  $P_{15-64}$ .

If the retirement age were to rise from 65 to say 67 years, the working-age population rises from  $P_{15-64}$  to  $P_{15-66}$ . With a constant  $P$ , in the final term of (Eq. 10.1b), the growth rate of the working-age population will then rise, i.e.,  $\Delta(P_{15-66}/P) = (P_{15-66}/P) - (P_{15-64}/P) > 0$ . Provided all the other terms in (Eq. 10.1b) remain the same, then wealth will also increase, i.e.  $\Delta(Y/P) > 0$ . Clearly, these other terms are also likely to change but it is not certain in which direction. A rise in the working-age population ( $\Delta P_{15-6} > 0$ ) will likely lead to more employment ( $\Delta E > 0$ ). The question is then whether  $\Delta P_{15-6} >$  or  $< \Delta E$ . The same holds for the other variables in Eq. (10.1b).

Figure 10.2 shows the 5-year average percentage productivity growth in the Netherlands, the EU-15 and the USA. The 5-year average was taken to avoid large year-to-year fluctuations. In the 1970s and 1980s, productivity growth in both the Netherlands and the EU-15 countries was high, but on a declining path, while in the US productivity growth was much lower at a fairly stable rate between 1 and 2%. After 2000, the 5-year US productivity growth rose to more than 2%, while in the EU-15 and the Netherlands it reached an all-time low in the period 2005–2010. The higher US productivity growth after 2000 is usually linked to the use of ICT throughout the US economy, but particularly in services such as wholesale and retail trade and financial services (Van Ark et al. 2003).



**Fig. 10.2** Five-year average growths in real labour productivity in the Netherlands, EU-15 and the USA between 1970 and 2010 (%). *Source:* EUKLEMS database (at [www.euklems.org](http://www.euklems.org)) for growth of hours work in all three countries; Statistics Netherlands for Dutch real labour productivity growth, and likewise for all EU-15 countries from Eurostat and for the USA from the US Bureau of Labor Statistics

Another noteworthy phenomenon is the spatial shift in regional productivity growth rates, particularly in northwest European countries. Traditionally, the economic core regions of such countries have been the major contributors to national productivity growth. However, since 2000, the leading role in national productivity growth has shifted towards the peripheral regions. In other words, these peripheral regions have had a much more positive effect on national productivity growth than the economic core regions. This was shown for regional productivity growth in the Netherlands by Broersma and Van Dijk (2008) and was linked to growing congestion in the urban economic core. More recently, this finding has been backed by the OECD (2011) and Dijkstra et al. (2013, Fig. 4) who have shown that this shift towards falling productivity growth in core urban regions and rising productivity growth in peripheral rural regions was present throughout the EU-15 and particularly in northwest European countries. Further, this trend could indeed be linked to the effects of traffic congestion in the core regions and also to the widespread use of ICT in both core and periphery areas.

In these data, we can observe three aspects related to ageing in the Netherlands: (i) a substantial rise in national ageing from the low level of the US growth path to the higher EU growth path starting from 2000, (ii) more rapid 'ageing' in peripheral regions, which will rise by 27 percentage-points between 2012 and 2040 compared with a projected 20 percentage-point rise in the economic core regions and (iii) the regional motor of national productivity growth shifting, since around 2000, from the core to the periphery. It seems as if this latter shift (iii) coincided with the relative rise in national ageing (i) and with the growing weight of the peripheral regions in national ageing (ii). These trends justify the focus of the current paper. What possibilities does the Netherlands have, in terms of increasing productivity

growth rates, to boost wealth in order to counteract the negative impacts of ageing? This issue will be investigated using an employer-employee matched micro-level dataset for the Netherlands covering the period 1999–2005. For employers, this database provides information about value added, various production costs, employment and their location. In terms of the employees working for these firms, we can distinguish their gender, age and level of skill.

### 10.3 Related Studies

Some studies have related the *level* of labour productivity to the *level* of ageing. Aubert and Crépon (2006) studied productivity using a matched employer-employee dataset for France covering 1994–2000. They found that productivity rises with age until the age of 40 after which it no longer rises. This relationship appears to be stable over industries. The age-productivity profile of firms appears to be similar to the age-labour costs profile and hence productivity rises with age but also with labour costs. The productivity-wage relationship was also studied by Van Ours and Stoeldraijer (2010) using matched employer-employee data for Dutch manufacturing companies between 2000 and 2005. They, however, found little evidence of productivity and labour costs being age-related.

Malmberg et al. (2008) observed that the age composition of the working-age population affects productivity in a complex way and, in their view, two hypotheses are relevant. The first is based on productivity at the individual level. Given that most studies indicate that labour productivity peaks somewhere between 30 and 50 years of age, firms with a relative young or old workforce tend to have a lower productivity *level* than firms with a workforce aged between 30 and 50. The second hypothesis is based on the experience of the Horndal steel plant in central Sweden. Between 1927 and 1952, this plant had a mean annual productivity growth rate of 2.5% despite a lack of major investments and the proportion of workers aged over 50 increasing from one-third in 1930 to almost a half in 1950 (Genberg 1992). This so-called Horndal experience suggests that workforce ageing is not a barrier to productivity growth. On the contrary, an ageing workforce appeared compatible with rapid increases in labour productivity, attributed to a learning-by-doing effect. Later, this formed an important part of Kenneth Arrow's learning-by-doing argument (Arrow 1962). Malmberg et al. (2008) argue that although the two hypotheses are competing (older workers have a lower level of productivity but a faster growth rate), both can be true, and drawing conclusions regarding the productivity of an ageing workforce is not as straightforward as it may appear because the aggregate effect is not necessarily a simple sum of the productivity of the various age groups. These authors further analysed a panel of employer-employee matched micro-data for Sweden covering 1985–1996 and found not a negative but a positive effect of ageing on plant-level productivity growth.

Next, we move to recent studies on the effect of increasing ageing on productivity *growth*. Such studies have only recently gained momentum. Bloom et al.

(2011) found that, between 1965 and 2005, the average legal retirement age in most developed, countries rose by about 6 months, while average male life expectancy rose by 9 years during the same period. They also studied the implications of ageing on economic growth. Their key premise is that labour supply, productivity and savings vary with age. Analysis of the effects of expected population ageing on (per capita) economic growth represents new territory due to the unprecedented size and nature of the current demographic shift. Gonzales-Eirpas and Niepelt (2012) show that taxation and the retirement age in OECD economies will need to increase in response to demographic ageing and, as a result, per capita growth will accelerate. In other words, as in (Eq. 10.1b), a rise in retirement age will increase wealth defined as per capita GDP. Studies have not as yet considered the effect a rise in retirement age will have on productivity growth at the firm level, and this is the aim of this paper. Beach (2008) shows that an ageing population is likely to have a noticeable direct and negative effect on wealth. Productivity growth, rather than growth in employment, will dominate changes in wealth because, due to ageing, the growth in participation will fall. However, a rise in the investment in skills and human capital on the supply side, combined with capital deepening and an increased rate of technological change on the demand side, of the labour market will raise labour productivity growth and mitigate the otherwise substantial fall in wealth over the coming decades.

Taking all this into consideration, we feel justified in specifying a single equation model for labour productivity growth in which both labour and capital are entered as lagged variables. In this way, problems of simultaneity can be avoided while, at the same time, interpretation of the estimation results remains straightforward. The aim of our analysis is to detect if, in addition to the effects of lagged growth of capital-labour ratios, there is also an effect of the gender, skills and age distributions of workers on productivity growth. We will use an employer-employee matched dataset of Dutch establishments, distinguished by industry, establishment size and region. The model we employ is set out in the next section, after which the data will be discussed and the estimation results presented.

## 10.4 Model Specification

The core of our specification is based on a simple production function of an individual business unit or establishment (which for ease will also be referred to as a firm):

$$y_i = f_i(n_i, k_i) = \Omega_i \left[ \left( \left( \sum_j e_{j,i}^\mu \right)^{1/\mu} \left( \sum_j n_{j,i}^\sigma \right)^{1/\sigma} \right)^\alpha \left( \prod_l k_{l,i}^{\beta_l} \right) \right] \quad (10.2)$$

where  $y_i$  is firm-level output in terms of value added,  $\Omega$  is a multifactor productivity (mfp) term in which labour input is measured in efficiency units of a variety of

different, heterogeneous types of workers (see Hansen 1993). For different types of labour  $n_j$ , each with its own efficiency  $e_j$ , the overall input of labour in efficiency units in firm  $i$  can be represented by  $e_i n_i = \left(\sum_j e_{j,i}^\mu\right)^{1/\mu} \left(\sum_j n_{j,i}^\sigma\right)^{1/\sigma}$ , where  $\sigma (>1)$  is the substitution parameter for different types of labour and  $\mu$  likewise for efficiency. In general, the higher the  $\sigma$  the less one type of labour can substitute for another. The larger the variety of workers  $j$ , the more detailed a choice a firm can make, thereby providing a better match of workers to jobs and thus a higher output. The parameter  $\alpha$  reflects the elasticity of output with respect to labour inputs. Likewise, the amount of capital the firm uses in its production process is a multiplicative function of capital assets,  $k_i$ . The parameters  $\beta_l$  reflect the elasticity of output with respect to these various capital assets  $l$ .

We now assume that labour efficiency,  $e_i$ , depends multiplicatively on worker characteristics  $x_{m,i}$ , where  $x_{m,i}$  refers to the gender, age and skill of workers in firm  $i$ .<sup>1</sup> Consequently,  $e_i = \prod_m x_{m,i}^{\eta_m}$ , where  $\eta_m$  are the elasticities of gender, age and skill respectively. The effect of these worker characteristics  $x_m$  on firm-level output depends not only on the values of  $\eta_m$  but also on the variety of efficiency units  $e_j$  of labour since  $x_{m,i} = \left(\sum_j e_{j,i}^\mu\right)^{1/[\mu (\sum_m \eta_m)]}$ . In addition, we take  $k_l$  to refer to capital in IT equipment and in non-IT equipment. Removing the firm index  $i$ , the assumptions above enable the production function defined in (10.2) to be rewritten as:

$$y = \Omega \left(\prod_m x_m^{\eta_m} n\right)^\alpha k_{IT}^\beta k_{non-IT}^\gamma \tag{10.3}$$

In turn, (Eq. 10.3) can be rewritten to represent firm-level labour productivity as follows:

$$\frac{y}{n} = \Omega \prod_m x_m^{\alpha \eta_m} n^{\alpha-1} k_{IT}^\beta k_{non-IT}^\gamma = \Omega \prod_m x_m^{\alpha \eta_m} \left(\frac{k_{IT}}{n}\right)^\beta \left(\frac{k_{non-IT}}{n}\right)^\gamma n^{\alpha+\beta+\gamma-1} \tag{10.4}$$

As such, firm-level labour productivity depends on multi-factor productivity ( $\Omega$ ), worker characteristics ( $x_m$ ), capital-labour ratios for IT and non-IT capital and finally a scale term that vanishes in a situation of constant returns to scale.

Equation (10.4) can be rewritten in natural logarithms as an additive expression:

$$\log\left(\frac{y}{n}\right) = \omega + \sum_m \alpha \eta_m \log x_m + \beta \log\left(\frac{k_{IT}}{n}\right) + \gamma \log\left(\frac{k_{non-IT}}{n}\right) + \xi \log n \tag{10.5}$$

where  $\omega = \log \Omega$  and  $\xi = \alpha + \beta + \gamma - 1$ .

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<sup>1</sup>The type of labour,  $n_j$ , depends on job characteristics, such as manual, servicing or managerial work. Note that we do not explore these type of characteristics further because the data available do not distinguish between different job characteristics.

Equation (10.5) can next be rewritten in growth terms as:

$$\Delta \log \left( \frac{y}{n} \right) = \Delta \omega + \sum_m \alpha \eta_m \Delta \log x_m + \beta \Delta \log \left( \frac{k_{IT}}{n} \right) + \gamma \Delta \log \left( \frac{k_{non-IT}}{n} \right) + \xi \Delta \log n \quad (10.6)$$

Equation (10.6) is the core of our model specification and shows how the growth in labour productivity changes when there are changes in

- mfp growth, also referred to as innovation,  $\Delta \omega$
- worker characteristics (gender, age, skill),  $\Delta \log x_m$
- capital intensity (both in IT and non-IT capital),  $\Delta \log (k_{IT}/n)$  and  $\Delta \log (k_{non-IT}/n)$
- scale,  $\Delta \log n$ <sup>2</sup>

Our analysis of labour productivity growth will be based on this core specification which, in its operational form formulated in growth rates ( $\Delta \log \cdot$ ), becomes:

$$\begin{aligned} \Delta \log \left( \frac{y}{h_{-1}} \right) = & \beta_0 + \beta_1 \Delta \log \left( \frac{k_{IT,-1}}{h_{-1}} \right) + \beta_2 \Delta \log \left( \frac{k_{non-IT,-1}}{h_{-1}} \right) \\ & + \beta_3 \Delta \log h_{-1} + \beta_4 \Delta \log |S_m - S_f| + \beta_5 \Delta \log S_{age1} \\ & + \beta_6 \Delta \log S_{age2} + \beta_7 \Delta \log S_{age3} + \beta_8 \Delta \log S_{age4} \\ & + \beta_9 \Delta \log S_{age5} + \beta_{10} \Delta \log S_{skill} + \text{controls} \end{aligned} \quad (10.7)$$

where  $y$  is the firm-level value added,  $k$  is the capital stock of IT and non-IT capital, respectively, and  $h$  is hours worked. To avoid possible simultaneity between growth of value added and capital/labour growth, the latter two variables are entered into (10.7) with a lag. This enables Eq. (10.7) to be estimated as a single model, avoiding the need to specify a simultaneous model of productivity growth together with models for growth in hours worked and growth in capital. The employee controls in (10.7) are made up of industry dummies, firm size dummies, regional dummies and year dummies (the latter are not reported here for convenience). The variables  $y$  and  $k_{-1}$  refer to different years, and will be defined in constant prices to identify quantity effects.

In Eq. (10.7),  $S_m$  and  $S_f$  are the shares of male and female employees, respectively. The variables  $S_{agei}$  are the shares of employees in age groups  $i = 1$  through 5 (1 = 15–24 years of age, 2 = 25–34, 3 = 35–44, 4 = 45–54, 5 = 55 and above) with the last of these as the reference category, and  $S_{skill}$  refers to the share of highly skilled employees. This skill index will be discussed in more detail in the next section. Finally, firm-level controls in our model refer to two-digit industry levels, establishment size, regional location of the firm and time dummies. The gender-effect is operationalised by considering the absolute difference in the share of male to female employees. The hypothesis is that the more equal the spread of employees

<sup>2</sup>It is valid to remove this scale variable when estimating the level version (10.5). These results are not reported here for convenience.

by gender within a firm, the higher the growth in productivity. The model distinguishes five age classes and the hypothesis is that firms with a higher share of prime-aged employees will have higher productivity growth. With regard to the share of highly skilled workers, the hypothesis is that having more highly skilled workers in a firm than the industry average will increase productivity growth.

## 10.5 Data Description

For the purpose of this chapter, a matched employer-employee database for the Netherlands was compiled by linking a number of micro-level databases provided by Statistics Netherlands. Section 10.3 shows the database structure. At its heart is the so-called Social Statistical Jobs database (SSB-Jobs), which contains information on all the jobs of all Dutch employees at the business unit in which they work, the dates they started or finished their jobs and the business unit's main activity (NACE). We have obtained information on all employees in the Netherlands for the period 1999–2005. Some indicators in this database, such as wages, are however not available for all employees but for a large sample of firms.

From the employer perspective, it includes all business units with personnel between 1999 and 2005.<sup>3</sup> As such, the SSB-Jobs database forms the core of a matched employer-employee census. In principal, SSB-Jobs was established as a longitudinal database containing details of all employment spells of all employees at all business units in the Netherlands. In practice, there are about 10 million job-employee combinations in each year, including jobs that start and end within that same year. At any point in time during the period under consideration, there were about 7 million employee jobs in the Netherlands. Hence, roughly 3 million jobs appear and vanish within 1 year. These data, based on the number of jobs at any point in time, is labelled the cross-section database. A fixed point in time is set for September 30 of each year.<sup>4</sup>

### 10.5.1 Employer Side

On the employer side, business-unit survey information is only available on balance sheet information and wage costs from Production Statistics (PS), and on investments in fixed assets from Investment Statistics (IS). Other datasets, containing aggregated data, provide additional information such as prices at the two-digit

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<sup>3</sup>Statistics Netherlands breaks companies down into business units. A business unit is the lowest level on which data on any given economic activity are collected by Statistics Netherlands.

<sup>4</sup>We selected this date because Statistics Netherlands use this as the reference date in its employer surveys to which the SSB will be linked.

industry level (Sect. 10.3). Typically, these surveys include about 60,000 business units, covering all business units with 50 or more employees and a sample of smaller ones. This boils down to about 8% of all Dutch business units. However, some industries are not included, and business unit information is not available for agriculture, transport, financial and public sectors (government, education, healthcare) for the period 2000–2005. Consequently, the PS and IS used in this study are limited to business units in the manufacturing, construction, trade, hotels and business services industries.<sup>5</sup> For these five industries, a sufficient period of data is available, covering 1999–2005. These industries contribute about 50% of total Dutch value added (based on 2005 and 2012 data).

### ***10.5.2 Employee Side***

On the employee side, the SSB-Jobs database can be linked to personal information from the Municipality Base Register (MBR) that includes the gender, age, marital status and children of all 16 million inhabitants of all Dutch municipalities. Since the MBR includes characteristics of all employees, linking it to SSB-Jobs maintains the matched employer-employee census (see Fig. 10.3).

For our purposes, the key pieces of information that the MBR does not cover are the level of education and the level of skill of Dutch citizens. This brings us back to the one major flaw in this matched employer-employee database: the lack of education and skill information for each of the workers in the SSB. The only publicly available source of data on the education and skills of workers in the Netherlands is the Labour Force Survey (LFS). This LFS is a rolling panel, but only a small fraction of the people questioned are followed over time and the majority are randomly reselected each year. The LFS covers about 1% of the employees in the SSB. Given the large cross-sectional component of the LFS, linking the LFS to SSB-Jobs would not find any business unit with employees that would be covered in every year, and so the database would be empty.

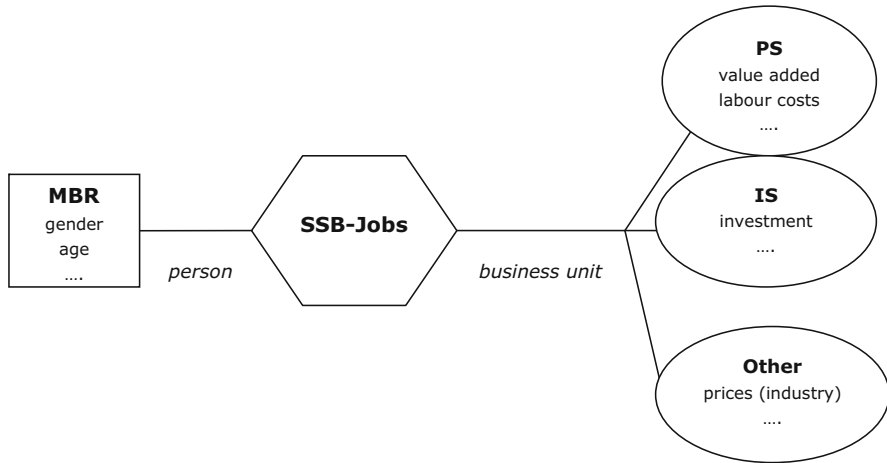
### ***10.5.3 Construction of Capital and Skill Indicator***

The database for 1999–2005 used in our empirical analysis lacks information on the capital stock of firms and the skill levels of their individual workers. Consequently, these variables (capital stock and worker skill level) are approximated using variables that are present in our dataset.

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<sup>5</sup>Manufacturing is covered by NACE codes 15–37; construction is NACE 45, trade NACE 50–52, hotels NACE 55 and business services NACE 70–74 (plus NACE 93 which formally comprises other services).





**Fig. 10.3** Structure of the Dutch matched employer-employee database. Note: The *hexagon* represents the key database linking persons to business units, the *rectangular shape* represents a census, and *ovals* are surveys

It is widely accepted that productive capital stock is the best measure of capital input for productivity analysis (OECD 2001). However, due to a lack of data, most studies use proxies for productive capital stock. For example, Licht and Moch (1999) use the number of computers as a proxy for the computer capital stock. The book values of capital were used in Brynjolffson and Hitt (1996) and in Lichtenberg (1995), while Lehr and Lichtenberg (1999) used investment flows. Book values are imperfect measures of productive capital stocks as they are based on historic, rather than replacement, costs and on accounting rules rather than on economic depreciation. Investment flows as a proxy suffer from noise when investment growth rates are not constant, which is typically the case with computer investment. Although our dataset has some limitations, it is possible to calculate a set of useful variables for our analysis. The Appendix shows how we approximated the capital stocks of each individual business unit. These capital stocks are used in estimating productivity growth through Eq. (10.7).

We have also constructed an approximation for the skill level of every business unit in the SSB where wage information was available. Our approach was motivated by the literature on human capital externalities that, in essence, claims a positive relationship between skill level and wages. A rise in the skill level will raise the wage rate by  $x\%$ .<sup>6</sup> In our approach, we reversed this reasoning and applied

<sup>6</sup>Such analyses are usually based on a so-called Mincerian wage equation. Rauch (1993) found  $x$  to be  $\approx 3\%$ , Acemoglu and Angrist (2000)  $\approx$  around  $1\%$ , Moretti (2004)  $\approx 0.5\text{--}0.7\%$  and Winter-Ebmer (1994)  $\approx 4\text{--}9\%$ . As such the levels of the return on human capital vary by country, the sample selected, human capital definition, the type of model and data (cross-sectional, time series, panel). Nevertheless, a significant positive effect is generally found.

it to all employees in a business unit. This then yields the average skill level in a business unit. That is, the higher the average wage rate in a business unit, the higher the average skill level of employees in that business unit.

The dataset we use also contains information on the average hourly wage a firm pays to its employees. Wage rates differ by industry due to industry-specific characteristics. That is, the average hourly wages in manufacturing differ from those in business services and in healthcare. We therefore determined, for each year and for each two-digit industry, the distribution of wage rates of firms in that particular industry. We assume that when a firm in a specific industry pays more than another firm within that same industry, that the former has a larger proportion of highly skilled employees. In other words, when a firm is paying above the industry average, it implies that its share of highly skilled workers is above that of firms with a lower average wage. As such, the relative wage rate a business unit is willing to pay is an indication of its relative share of highly skilled employees. In this way, we calculated individual firm skill level for every year available (1999–2005) and in every two-digit industry. In other words, the difference between the firm wage rate,  $W_i$ , and its industry wage rate,  $W_{industry}$ , is a measure of the skill level of that firm. Hence,

$$S_{skill} = 1 + (W_i/W_{industry}) \quad (10.8)$$

where  $S_{skill}$  is the share of skilled employees in firm  $i$ . In this way, we end up with an approximation for the share of skilled workers in each firm in each year. This skill level for each firm can then be used as an explanatory variable in Eq. (10.7) to represent the impact of a change in skill level on productivity growth. Equation (10.8) is defined in such a way that  $S_{skill} > 0$ , and so a logarithm can be calculated and applied in our model (10.7).

### 10.5.4 Regional Classification

The data with which our model will be estimated allow us to include a number of control variables. Apart from the gender, age and skill of the employees of a firm, we can also distinguish between different characteristics of the firm. We can distinguish the industry of a firm in terms of its NACE classification, the size class of a firm in terms of the number of employees and we can distinguish its location. A common way to incorporate locational demarcation is based on the so-called NUTS levels of Eurostat. For the Netherlands, the most detailed regional demarcation is the municipality level. On a note of caution, neither the NUTS, nor the municipal, demarcations have a truly economic interpretation as they are based more on a historical or political interpretation than an economic one. Given that we have information on the municipality in which a firm is located, we have simply aggregated these municipalities into areas that reflect a more economic



**Fig. 10.4** Economic core, intermediate zone and periphery of the Netherlands. *Source:* own calculations from data of Statistics Netherlands

demarcation. These relate to the concept of functional urban areas (FUAs) as discussed by the OECD (2014a). Figure 10.4 shows how this classification has been applied to create three economic regions based on a grouping of municipalities.<sup>7</sup>

The economic core of the Netherlands is located in the western part of the country, includes the four largest cities (Amsterdam, Rotterdam, The Hague and Utrecht), and is where employment is most concentrated and most activities take place. The area includes neighbouring municipalities to these four cities, and we have set the boundary at about an hour's car journey from one end of the region to the other. The next group of municipalities is the called intermediate zone, which is

<sup>7</sup>We also estimated model specifications using the more common standard regional classification into NUTS-1 and NUTS-2 areas, but this did not significantly alter any of the conclusions.

also based on a similar journey time. The idea is that this intermediate region benefits from its proximity to the economic core, and also benefits from specificities of being outside the core, such as more space and higher quality residential areas. The remainder of the country is labelled the periphery (see Fig. 10.4).

### 10.5.5 Additional Labour Market Variables

Although Eq. (10.1b) is based on a decomposition of labour productivity growth by country or region, it is likely that a firm's labour productivity growth also depends on the following additional variables: (i) the change in the number of hours worked per employee,  $\Delta(H/E)$ ; (ii) the change in (net) labour participation,  $\Delta(E/P_{15-64})$ , and depending on the level at which  $P_{15-64}$  is aggregated; and (iii) the change in the population share of working age,  $\Delta(P_{15-64}/P)$ . However, as neither  $P_{15-64}$  nor  $P$  can be observed at the firm level, we have to aggregate these to a higher level. The most obvious choice is to link this to the regional classification into the three economic core, intermediate zone and periphery regions shown in Fig. 10.4.<sup>8</sup>

As a consequence, there is only one variable that can be drawn from (10.1b) and added to (10.7). This is the change in hours worked per employee  $\Delta\log(H/E)$ , which is the only variable in (10.1b) that is actually monitored on the firm level. The other two variables are only observable on the regional level and these are included as control dummies in our model (10.7) based on the three economic regions of Fig. 10.4. To avoid simultaneity, this additional variable ( $H/E$ ) is entered with a lag.

## 10.6 Model Specification and Empirical Results

Taking the additional variable of working hours per employee into account and including variables for regional worker and job characteristics in the Netherlands, Eq. (10.9) provides the model specification for the real *growth* rate in firm level productivity:

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<sup>8</sup>We could have chosen a different kind of regional classification, such as NUTS-1, NUTS-2 or municipalities. However, this would have meant that we had to specify and estimate our model as a multilevel specification. We instead opted for a simple regional classification, which means that our model can be estimated using micro-level data, with the higher-level regional variables becoming regional dummy variables for the three regions distinguished.

$$\begin{aligned}
\Delta \log \left( \frac{y}{h_{-1}} \right) = & \beta_0 + \beta_1 \Delta \log \left( \frac{k_{IT,-1}}{h_{-1}} \right) + \beta_2 \Delta \log \left( \frac{k_{non-IT,-1}}{h_{-1}} \right) + \beta_3 \Delta \log h_{-1} \\
& + \beta_4 \log |S_m - S_f| + \beta_5 \log S_{age1} + \beta_6 \log S_{age2} + \beta_7 \log S_{age3} \\
& + \beta_8 \log S_{age4} + \beta_9 \log S_{age5} + \beta_{11} \log S_{skill} \\
& + \beta_{12} \Delta \log \left( \frac{h_{-1}}{e_{-1}} \right) + \text{controls (industry, firm size and region)}
\end{aligned} \tag{10.9}$$

The model shown in Eq. (10.9) will be estimated and tested using SPSS. The estimation results that explain the real productivity growth of Dutch firms are shown in Table 10.1. This productivity growth constitutes the source of the welfare growth that is being considered in this chapter [see Eq. (10.1b)]. Other potential sources of welfare growth including a growth in working hours, in the number of workers and in the working-age population are addressed in other studies. Since our study is on real productivity growth, the explanatory variables of model (10.9) are also in the form of first differences and may need to be lagged to avoid simultaneity. Real labour productivity growth depends on the lagged growth rates of the ratios of IT-capital to hours worked and of non-IT capital to hours worked. It will also depend on the lagged growth rate of our additional variable of (lagged) growth of hours worked per employee. An important question when it comes to the specification of our growth model is whether the variables reflecting worker characteristics (gender, age, skill) should also be in terms of growth rates or can remain as levels because these characteristics change over time very gradually. For example, changes in age class occur only when workers move from one age class (each spanning 10 years) to the next. The fact that changes in these variables are small argues against using growth rates because these will be close to zero. However, the actual levels of these worker characteristics may indeed affect real productivity growth: workers in a certain age group may well demonstrate higher labour productivity growth rates than workers in another age group. For example, younger workers may learn faster. This leads us to conclude that, in our model, the real labour productivity growth of a firm is best related to the level of the workers' gender, age and skill characteristics. Similarly, the other control dummies related to firm characteristics (region, industry and size) are also applied as levels as they are generally constant over time and incorporating zero growth rates would not provide useful information.

Table 10.1 presents the estimation results for the productivity growth model (Eq. 10.9) in which the worker characteristics of gender, age and skills are thus in the form of levels. This shows that the growth rates of both the IT and non-IT capital-labour ratios have a strong positive effect on productivity growth. Further, the hours worked per employee has a positive and strongly significant effect on real productivity growth, indicating that an increase in the number of hours worked by existing employees does indeed have a positive effect on labour productivity growth.

**Table 10.1** Estimation results explaining the *growth* of firm labour productivity for the Netherlands, 2001–2005

Variable name	Symbol in Eq. (10.9)	Estimation and (test Results) of (10.9)
Intercept	$\beta_0$	-0.190 (-7.105)
Lagged growth rate of IT-capital—labour ratio	$\Delta \log \left( \frac{k_{IT,t-1}}{h_{t-1}} \right)$	0.740 (70.31)
Lagged growth rate of non-IT-capital—labour ratio	$\Delta \log \left( \frac{k_{non-IT,t-1}}{h_{t-1}} \right)$	0.703 (47.83)
Lagged growth rate of hours worked per employee	$\Delta \log \left( \frac{h_{t-1}}{e_{t-1}} \right)$	0.012 (6.036)
Level of worker characteristics		
<i>Gender</i>		
Absolute difference in share of male and female workers	$\log  S_m - S_f $	-0.000 (-0.113)
<i>Age group</i>		
Share age group 15–24	$\log S_{age1}$	0.044 (11.57)
Share age group 25–34	$\log S_{age2}$	-0.020 (-3.188)
Share age group 35–44	$\log S_{age3}$	-0.014 (-1.807)
Share age group 45–54	$\log S_{age4}$	-0.011 (-1.996)
Share of age group 55+	Reference category	-
<i>Skill</i>		
Share skilled workers	$\log S_{skill}$	0.399 (25.77)
Establishment characteristics		
<i>Region</i>		
Core	Reference category	-
Intermediate zone		0.021 (3.639)
Periphery		0.028 (4.368)
<i>Industry</i>		
Wholesale	NACE Reference category	-
Food and tobacco	15–16	-0.035 (-3.170)
Textiles etc.	17–19	-0.033 (-1.681)
Paper and graphics	21–22	-0.048 (-4.371)
Petroleum, chemicals	23–25	0.035 (3.054)
Machinery	27	-0.038 (-3.807)
Machinery products	28–29	-0.048 (-4.488)
Electronics	30–33	0.014 (0.908)
Transport equipment	34–35	-0.037 (-2.165)
Other manufacturing	20, 26, 36, 37	-0.067 (-5.774)
Construction	45	-0.046 (-4.459)
Automotive trade	50	-0.087 (-5.162)
Retail trade	52	-0.056 (-4.510)
Hotels etc.	55	-0.160 (-9.092)
Real estate services	70	-0.088 (-3.142)
ICT business services	72	0.038 (1.818)
High skilled business services	741–744	-0.031 (-2.625)

(continued)

**Table 10.1** (continued)

Variable name	Symbol in Eq. (10.9)	Estimation and (test Results) of (10.9)
Low skilled business services	745–748	0.019 (1.494)
Other services	90–93	–0.089 (–1.947)
<i>Firm size</i>	employees	
	1–4	–0.438 (–2.169)
	5–9	0.008 (0.081)
	10–19	–0.095 (–4.492)
	20–49 Reference category	–
	50–99	0.011 (1.665)
	100–149	0.021 (2.605)
	150–199	0.035 (3.446)
	200–249	0.015 (1.141)
	250–499	0.012 (1.224)
	500–999	0.019 (1.374)
	1000–1999	0.019 (0.978)
	>2000	0.016 (0.759)
Adjusted R <sup>2</sup>		0.180
Observations		28,818

Note: The categories for age group ‘55 and above’, for region ‘Core’, for industry ‘wholesale trade’ and for firm size ‘20–49 employees’ all act as reference categories for which coefficients cannot be estimated and therefore have the value zero in the table. We also included year dummies, but they are not reported here for convenience

The coefficient for gender is not significant, implying that the male–female distribution of employees within a firm has no effect on productivity growth. Of particular interest for this chapter is the relationship between ageing and productivity growth. The results show that compared to the reference group of older workers (55+), all the other age groups between 25 and 54 have negative coefficients implying younger workers’ productivity growth is below that of the older reference age group. The largest and most significant negative effect is for the 25–34 age group. However, the youngest group (15–24) has a positive coefficient indicating that the productivity growth of this age group does outstrip that of older workers. This large effect of young people on productivity growth can be explained by the fact that young people have a steep learning curve. What is perhaps more surprising is that the older workers show higher productivity growth rates than the so-called prime-age workers. However, this finding is in line with the Horndal effect (Genberg 1992) and with results reported by Malmberg et al. (2008) that suggest that ageing does not have a negative effect on productivity growth because the positive effects of learning-by-doing experiences outweigh the negative effect of the lower flexibility of more elderly workers. As expected, the ‘share of skilled workers’ coefficient is highly significant implying that having more skilled workers boosts productivity growth.

The results for the three distinguished economic regions (economic core, intermediate zone and periphery) show very interesting differences and point towards the following characteristics: productivity growth is higher outside the core region and is slightly larger in the periphery than in the intermediate zone. That is, firms outside the economic core have higher productivity growth than firms located inside this core region. This finding is in line with results found by Broersma and Van Dijk (2008) using regional industry data. In an EU-wide study of regional labour productivity, Dijkstra et al. (2013), despite not making distinctions based on worker characteristics, such as age and skill, nor on firm characteristics such as industry or size, nevertheless also found lower productivity growths in the economic core regions of countries in northwest Europe. They related this to the high costs associated with traffic congestion in economic core regions. The regional differences that we have identified are also in line with the most recent report on the Netherlands by the OECD (2014a, pp. 81–82) which makes clear that Functional Urban Areas with over 500,000 inhabitants show slower labour productivity growths than the national average.

We have also controlled for differences in the productivity of different sectors. The highest real growth rates in firm labour productivity are seen in the manufacturing of petroleum and chemical products and in ICT business services. Productivity growth is also relatively high in low skilled business services compared to wholesale trade (our reference category). The chemical industry, which showed the highest growth in productivity, is particularly present in the periphery, such as in the municipalities of Delfzijl and Emmen (both in the north) and Terneuzen and Geleen (both in the south). Nevertheless, the analysis shows that even after taking account of both industry and regional effects, the effects of real productivity growth is still significantly higher outside the core regions.

Finally, Table 10.1 also suggests a link between establishment size, in terms of numbers of employees, and the real growth rate of a firm's labour productivity. We observe that firms with about 100–200 employees show significantly higher productivity growths. Although the coefficients are not always significant, the general picture is that intermediate-sized firms do slightly better than both smaller and larger firms. The most striking result is the significantly lower growth rates we find for small firms with less than 20 employees. Given that the spatial distribution of firms by size differs substantially by region (Edzes et al. 2013), it is important to control for firm size and industrial sector when attempting to draw conclusions. Even after this, the finding of higher productivity growth in the peripheral parts of the country remains a very robust result.

## 10.7 Concluding Remarks

Ageing is a phenomenon that attracts ever-increasing attention because it has many implications for society and is therefore an important topic for policymakers. In this chapter, we focus mainly on the consequences for welfare and labour supply.



Ageing may also lead to higher labour costs (or lower net wages) if the working generation has to finance pension payments for an increasing number of retired people. We focus here on the effect of a decreasing labour supply and how this can be compensated for to maintain the same welfare level. In principle, there are a number of ways to resolve this issue:

1. increase the retirement age, so that people stay longer in the labour force;
2. increase the number of working hours, especially for part-time workers;
3. increase the size of the working population (such as through immigration);
4. increase labour productivity, such that the same number of working hours delivers more production;
5. optimise the spatial allocation of production activities and the work force to maximise efficiency and minimise congestion and pollution cost.

In addition, one should take account of possible interactions between these variables. For instance, if older workers continue working to an older age, or employees work more hours, this might also have positive effects on labour productivity, causing that the overall effect of working more years and/or more hours to be less negative than expected.

In this chapter, we have tried to shed light on this issue through an empirical analysis using data for the Netherlands. The Netherlands still has a moderate ageing population compared to some countries such as Italy, Spain and Japan, but the rise in ageing is relatively strong, with the country expected to move from the relatively low US level to the higher EU level. Another feature of the Netherlands is its very low average number of working hours due to the high proportion of part-time workers (particularly females). Labour productivity is high, but has only been growing slowly, particularly since 2000. Productivity growth appears to be particularly low in the more-densely populated, economic core region of the Netherlands. The negative effects of congestion and pollution seem to outweigh any positive agglomeration effect. This raises questions as to how, among other aspects, ageing, the number of working hours and the spatial distribution of production influences labour productivity growth at the firm level.

These general observations have been investigated in several elementary studies. In this chapter, a more thorough multivariate model is used to explain the real growth rate in labour productivity of firms in the Netherlands using an entirely new and unique dataset for the Netherlands, with firm and worker micro-level data for the period from 2000 to 2005.

The results show that real productivity growth depends primarily on the real lagged capital-labour ratios for both IT and non-IT capitals. An increase in the real growth rates of these two capital-labour ratios raises the growth in real labour productivity. The results indicate that increasing the skill level of the workforce will also have a positive effect on a firm's labour productivity growth. As such, investing in education and training is a good investment. An increase in the working hours of existing employees will raise their productivity, especially since employees in the Netherlands have a relatively low level of working hours to start with. That is, an increase in the working hours of current employees will

increase the growth in real labour productivity. Our results also show that the gendered distribution of workers does not have much influence over productivity growth.

With regard to the age distribution of workers we found that, compared to the reference group of older workers (55+), all the age groups covering workers aged between 25 and 54 have lower productivity growth. The poorest performance in terms of productivity growth was, perhaps surprisingly, associated with the 25–34 age group. Only the 15–24 age group outperformed our oldest category in terms of productivity growth. The counterintuitive finding that older workers achieve higher productivity growth than those often viewed as in the prime age-group for workers is in line and with results reported by Malmberg et al. (2008) who similarly concluded that ageing does not have a negative effect on productivity growth. This can perhaps be explained by the so-called *Horndal effect*, where the accumulated work experience and firm-specific knowledge of older workers compensates for possible negative ageing effects such as lower flexibility and a reluctance and inability to learn new things (Genberg 1992).

Further, we found that the type of firm, in terms of its main activity (i.e. its industry), has an influence on productivity growth. Capital-intensive industries, such as the petroleum and chemical branches, have relatively high productivity growth rates. It is also significant that the ICT service industry has a strong productivity growth. This might be promising for the future given that the surge in US productivity growth in the late-1990s appears to be driven by the growth witnessed in ICT-using service industries (van Ark et al. 2003). We also assessed the influence of firm size, and found that medium-sized firms have seen slightly higher productivity growth rates than both smaller and larger companies.

Finally, having taken account of the influence of industry, firm size and differences in workers' characteristics, we are still able to show that the periphery outperforms the core region in terms of productivity growth, although the absolute level of productivity is still higher in the core region. The latter could be related to a higher skill level and a younger population composition. As such, it is likely that factors absent from our analysis are also driving this difference. For example, these might be phenomena linked to regional differences with respect to (i) adaptability to new situations, (ii) integrity, (iii) being able to work as a team, (iv) communicative skills and (v) showing initiative and leadership. Nevertheless, our conclusion that productivity growth is relatively high in the periphery compared to the economic core of the Netherlands remains valid. Broersma and Van Dijk (2008) studied regional labour productivity based on Dutch NUTS-2 regions and also found that, apart from a number of explanatory variables, multifactor productivity (mfp) growth is the largest contributor to labour productivity growth, particularly in peripheral regions. Here, mfp growth can be seen as the residual in a production function, which itself can be related to a multitude of explanatory variables, including those mentioned above (i)–(v). Overall, one can conclude that the regional differences in productivity are narrowing.

The explanations for the growth of labour productivity lead to several policy recommendations with regard to the problem of ageing. Given that we find that

having a higher proportion of older workers may well have a positive effect on productivity growth, stimulating a further increase in the participation rate of older workers may increase labour productivity growth and, as a result, raise wealth. Increasing the retirement age to increase the labour supply will also contribute to productivity growth and thus help to maintain the high level of welfare in the Netherlands despite the ongoing ageing. Our results also show that increasing the number of working hours per employee, by reducing the high proportion of part-time working for which the Netherlands is famous, may also lead to an increase in productivity growth and hence further growth in welfare. A practical problem is that Dutch workers have indicated that they are very satisfied with their working hours and reluctant to increase them (Noback et al. 2014).

The results for the three economic regions (economic core, intermediate zone and periphery) convincingly show that firms outside the economic core have higher productivity growth rates than firms that are located inside this core region. This corroborates results found by Broersma and Van Dijk (2008), the OECD (2011) and Dijkstra et al. (2013), and suggests that positive agglomeration effects are outweighed by other aspects such as higher traffic congestion and pollution costs. Given that it is especially the large cities in the core Randstad region that show labour productivity growth rates below the national average, a more equal spread of economic activities to include the intermediate and peripheral areas may increase the overall national labour productivity growth and reduce regional differences. This might also help to mitigate the effects of ageing and population decline in the peripheral areas.

## Appendix 1: Characteristics of the Data

The number of data points for all the firm variables, for each year between 1999 and 2005, is over 45,000. A summary of these data is provided in Tables 10.2 and 10.3. Table 10.2 provides an overview of the control variables in the database that are used when estimating Eq. (10.7), while Table 10.3 provides some descriptive statistics for the other variables used in the model. Table 10.2 reflects that each of the control variables (by industry, firm size and region) has sufficient observations for our analysis. Here, the ‘other services’ industry is the smallest with only 119 observations, which should be sufficient for estimation purposes.

**Table 10.2** Distribution of data observations, 1999–2005

Variable	Detail	Frequency	%
Industry	NACE (1993)		
Manufacturing: Food and tobacco	15–16	2876	6.3
Textile, cloths, leather	17–19	790	1.7
Paper, graphics	21–22	3065	6.7
Petroleum, chemicals, rubber	23–25	2890	6.3
Metal, metal products	27–28	4178	9.2
Machinery	29	3268	7.2
Electronics	30–33	1238	2.7
Transport	34–35	1028	2.3
Other	20, 26, 36–37	2680	5.9
Construction: Construction	45	3619	7.9
Trade: Car sales	50	1036	2.3
Wholesale trade	51	9177	20.1
Retail trade	52	2919	6.4
Hotels: Hotels, restaurants, etc.	55	1043	2.3
Business services: Renting of equipment	71	364	0.8
Computer services	72	742	1.6
High skilled business services	741–744	2354	5.1
Low skilled business services	745–748	2226	4.9
Other services: Other services	93	119	0.3
All industries		45,612	100
Region	Number of municipalities		
Economic core	139	18,382	40.3
Intermediary	169	16,394	35.9
Periphery	150	10,836	23.8
All regions		45,612	100
Firm size			
Number of employees			
Less than 20		1138	2.5
20–50		12,674	27.8
50–100		14,291	31.3
100–200		9746	21.3
200–500		5072	11.1
More than 500		2691	6.0
All sizes		45,612	100

Source: Derived from firm-level database of Statistics Netherlands

**Table 10.3** Mean values of some plant-level variables, 1999–2005

Variable	Unit	Frequency	Mean	SD
Value added (current prices)	1000 euro	45,612	10,274.4	59,270.6
Labour costs (current prices)	1000 euro	45,612	5451.7	23,755.1
Depreciation (current prices)	1000 euro	45,612	1259.5	8535.4
Total investments (current prices)	1000 euro	45,612	1269.5	8260.9
IT investments (current prices)	1000 euro	45,612	99.9	687.5
Total capital stock (current prices)	1000 euro	45,612	20,763.0	147,903
IT capital stock (current prices)	1000 euro	45,612	720.8	4188.7
Number of employees	1	45,612	225	1330.2
Percentage males	%	45,611	74.6	21.6
Average age	Years	45,612	37.9	4.8
Percentage 15–24 years of age	%	45,612	13.1	14.1
Percentage 25–34 years of age	%	45,612	27.8	11.6
Percentage 35–44 years of age	%	45,612	28.4	9.7
Percentage 45–54 years of age	%	45,612	20.0	9.6
Percentage 55 years and above	%	45,612	10.6	8.0
Index of skilled workers per firm relative to those per industry	1 + (firm wage)/ (industry wage)	45,364	2.0	313.1

Source: Statistics Netherlands, various sources from [www.cbs.nl](http://www.cbs.nl)

## Appendix 2: Calculation of Firm-Level Capital Stock

The database for 1999–2005 that we use in our empirical analysis of the level and growth of labour productivity lacks information about the capital stock of each firm and about the education or skill level of the individual workers. This means that the capital stock and worker skill level variables have to be approximated using variables that are available in our dataset.

It is generally accepted that, for productivity analyses, the productive capital stock of a firm is the best measure of capital input (OECD 2001). However, due to a lack of data, most studies use a proxy for productive capital stock. For example, Licht and Moch (1999) use the number of computers as a proxy for the computer capital stock. Book values of capital stock were used in Brynjolfsson and Hitt (1996) and in Lichtenberg (1995), while Lehr and Lichtenberg (1999) used investment flows. Book values are imperfect measures of productive capital stocks as they are based on historic, rather than replacement, cost and on accounting rules rather than economic depreciation. Investment flows, as a proxy, are prone to be misleading if the investment growth rate is not constant, which is typically the case for computer investments.

An alternative approach is to derive productive capital stock using the Perpetual Inventory Method (PIM), which essentially sums past investment flows, correcting

for reduction in productive capacity due to ageing. Assuming a geometric withdrawal pattern (see e.g. Jorgenson and Stiroh 2000), the capital stock is derived as follows:

$$K_t = K_{t-1}(1 - \delta) + I_t \quad (10.10)$$

where  $K_t$  is the capital stock at year  $t$ ,  $I_t$  the investment flow during year  $t$ , and  $\delta$  the rate of economic depreciation.

The main problem with using this approach, especially in micro-level studies, is the lack of long series of investment flow data. Typically, micro-level data on investments are only available for a short time period. Standard methods to circumvent this problem in macro-analyses, such as the Harberger method, are not appropriate and cannot be used. In the Harberger method, the initial year's capital stock is estimated by dividing investment in the initial year by the sum of the growth rate of investment and the depreciation rate. This method is based on a steady-state assumption: and so investment flows must be smooth and grow at a constant rate. This might be an acceptable assumption for the total economy or the sectoral level, but it is not realistic at the firm level. Firm-level investment patterns are volatile: investments often occur in spikes. Here, we propose a new method to deal with this problem that uses information on depreciation reported by firms.

Most micro-production surveys that include investment variables also include depreciation recorded in the firms' books. This reported (firm-level) depreciation, which is determined by accounting rules rather than technical factors, contains information on past firm-level investments. This information can be retrieved when the accounting practices of a firm is known using the so-called "booked depreciation method" (see Broersma et al. 2003). Linear depreciation is a standard accounting rule that is often used in practice. With this approach, an investment made in year  $t$  is written off in equal parts during the anticipated lifetime of the asset. If the lifetime  $L$  of an asset is say 15 year, each year one-fifteenth of the original investment value is recorded as depreciation. Hence, the booked depreciation in year  $t$  (i.e.,  $D_t$ ) is the summation of investments made in the period  $t-L$  to  $t$ , multiplied by  $1/L$ :

$$D_t = \sum_{k=1}^L \frac{1}{L} \cdot I_{t-k} \quad (10.11)$$

From this, one can deduce that:

$$D_{t+1} - D_t = \frac{1}{L}I_t - \frac{1}{L}I_{t-L} \quad (10.12)$$

Rewriting gives:

$$I_{t-L} = I_t - L(D_{t+1} - D_t). \quad (10.13)$$

This equation shows that past investment flows (made before time  $t$ ) can be derived on the basis of investment and depreciation data at time  $t$  and later.

This “booked depreciation method” has been used to derive constant price investment flows for total capital before 1999 (see below for the formal derivation). For computer equipment, separate firm-level depreciation figures are not available. Therefore, we assumed that, prior to our first observation (1999), the capital stock of computer hardware for each firm was equal to its two-digit industry’s average proportion of computer capital in 1999 multiplied by the firm’s total capital stock in 1999, derived using the booked depreciation method.

Constant price investment flows were estimated by deflating firm-level investment flows by the price deflators (for the relevant two-digit industry) for total investment in fixed assets and in computing equipment, drawn from the EUKLEMS database ([www.euklems.net](http://www.euklems.net)). This deflator is also used to calculate firm-level constant price depreciations.

When using investment series in (10.10), stocks are derived using a depreciation rate for non-computer equipment of 0.067, based on an average lifespan of 15 years ( $\delta = 1/L$ ). The lifespan of buildings is much longer but we are only considering productive capital stocks and do not see buildings as falling within this category. When it comes to computer capital, we assume a lifetime of 5 years, and hence  $\delta = 0.2$ . Finally, we estimate the real stock of non-computer capital simply by subtracting the computer stock from the total capital stock.

The specific application of the depreciation method outlined above to the current analysis requires further assumptions as depreciation and investment data are only available for the period 1999–2005. First, we split the 15-year period from 1984 to 1998 into two: 1984–1989 and 1990–1998 for reasons that will become apparent below. Based on a linear depreciation rule, and with  $K_{1999}$  the real capital stock in 1999, we can state that:

$$\begin{aligned} K_{1999} &= \sum_{t=1984}^{1998} \frac{(t - 1984 + 1)}{15} I_t \\ &= \sum_{t=1984}^{1989} \frac{(t - 1984 + 1)}{15} I_t + \sum_{t=1990}^{1998} \frac{(t - 1984 + 1)}{15} I_t \end{aligned} \quad (10.14)$$

where  $I$  and  $D$  refer to the investment and depreciation flows in constant prices. The first term on the right hand can be derived using (10.13):

$$I_t = 15(D_{t+15} - D_{t+16}) + I_{t+15}, t = 1984 \dots 1989 \quad (10.15)$$

From which we get:

$$\sum_{t=1984}^{1989} I_t = \sum_{t=1984}^{1989} 15 \cdot (D_{t+15} - D_{t+16}) + I_{t+15}$$

Then, substituting this in (10.14), we get:

$$\begin{aligned} \sum_{t=1984}^{1989} \frac{(t-1984+1)}{15} I_t &= \sum_{t=1984}^{1989} \left[ (t-1984+1) \cdot (D_{t+15} - D_{t+16}) + \frac{(t-1984+1)}{15} I_{t+15} \right] \\ &= \sum_{t=1999}^{2004} \left[ (t-1999+1) \cdot (D_t - D_{t+1}) + \frac{(t-1999+1)}{15} I_t \right] \end{aligned}$$

The second term on the right-hand side of (10.14) is unknown but can be approximated as follows:<sup>9</sup>

$$\sum_{t=1990}^{1998} \frac{(t-1984+1)}{15} I_t \approx \frac{11}{15} \sum_{t=1990}^{1998} I_t \quad (10.16)$$

Using (11), the total depreciation over the period equals:

$$\sum_{t=1999}^{2005} D_t = \frac{1}{15} \left( \sum_{t=1990}^{2004} I_t + \sum_{t=1989}^{2003} I_t + \dots + \sum_{t=1985}^{1999} I_t + \sum_{t=1984}^{1998} I_t \right) \quad (10.17)$$

which can be rewritten as the following three terms:

$$\sum_{t=1999}^{2005} D_t = \frac{7}{15} \sum_{t=1990}^{1998} I_t + \sum_{t=1999}^{2004} \frac{(2004+1-t)}{15} I_t + \sum_{t=1984}^{1989} \frac{(t-1984+1)}{15} I_t. \quad (10.18)$$

Rearranging then gives:

$$\sum_{t=1990}^{1998} I_t = \frac{15}{7} \sum_{t=1999}^{2005} D_t - \sum_{t=1999}^{2004} \frac{(2004+1-t)}{7} I_t - \sum_{t=1984}^{1989} \frac{(t-1984+1)}{7} I_t \quad (10.19)$$

The first and second terms can be simply found from the available data, and the third term can be derived from (10.15), i.e.  $I_t = 15(D_{t+15} - D_{t+16}) + I_{t+15}$ , which yields  $I_{1999-15} = I_{1984}$  and so on. The third term then becomes:

<sup>9</sup>This approximation is exact when  $I_t$  is constant over time.



$$\begin{aligned} \sum_{t=1984}^{1989} \frac{(t-1984+1)}{7} I_t &= \sum_{t=1984}^{1989} \left[ \left( \frac{15 \cdot (t-1984+1)}{7} \right) \cdot (D_{t+15} - D_{t+16}) + \left( \frac{(t-1984+1)}{7} \right) \cdot I_{t+15} \right] \\ &= \sum_{t=1999}^{2004} \left[ \left( \frac{15 \cdot (t-1999+1)}{7} \right) \cdot (D_t - D_{t+1}) + \left( \frac{(t-1999+1)}{7} \right) \cdot I_t \right] \end{aligned}$$

By combining information on  $\sum_{t=1990}^{1998} I_t$  (from 10.19) with (10.16), we can obtain the second term in (10.14) as follows:

$$\begin{aligned} \sum_{t=1990}^{1998} \frac{(t-1984+1)}{15} I_t &\approx \frac{11}{15} \sum_{t=1990}^{1998} I_t \\ &= \left[ \frac{11}{7} \sum_{t=1999}^{2005} D_t \right] - \left[ \sum_{t=1999}^{2004} \frac{11 \cdot (2004+1-t)}{105} I_t \right] \\ &\quad - \sum_{t=1999}^{2004} \left[ \left( \frac{11 \cdot (t-1999+1)}{7} \right) \cdot (D_t - D_{t+1}) + \left( \frac{11 \cdot (t-1999+1)}{105} \right) \cdot I_t \right] \end{aligned}$$

As such, we now have an expression for the (constant price) capital stock in 1999. Using the perpetual inventory method (PIM), we can then easily construct the capital stocks for 2000 through 2005 as:

$$K_t = K_{t-1}(1 - \delta) + I_t$$

where  $I_t$  is the investment (in constant prices) and  $\delta$  the depreciation rate ( $\delta = 1/L$ ). For total capital we use  $L = 15$  years, so  $\delta = 0.067$ . The same methodology is applied to the computer capital stock, with the difference being that the depreciation period is now 5 years instead of 15 years, so  $\delta = 0.2$ . The starting value for computer capital is determined, as outlined above, by simply assuming that, in 1999, the share of computer capital in total capital for a firm is equal to the computer share in total capital for the relevant industry. These are reported in the table below (Table 10.4). Since each firm has different starting values for  $K_{1999}$ , each firm will also have different starting values for computer capital  $K_{IT, 1999}$ . Then, using PIM, for each firm we calculate the investment in computers in year  $t$  as  $I_{IT,t}$ , and, with  $\delta = 0.2$ , we can then calculate the computer capital stocks for the years 2000 through 2005 for each firm.

**Table 10.4** Share of computer capital by industry in 1999

Industry	NACE-code	Proportion of computer capital in total capital (%)
Manufacturing of food, drinks and tobacco	15–16	0.82
Manufacturing of textiles, clothes and leather	17–19	1.18
Manufacturing of paper, publishing and printing	21–22	1.24
Manufacturing of refined petroleum and chemicals	23–25	0.57
Manufacturing of basic metals and fabricated metals	27–28	1.02
Manufacturing of machinery	29	2.87
Manufacturing of electrical and optical equipment	30–33	1.74
Manufacturing of transport equipment	34–35	0.91
Manufacturing of wood, cork, wood products, manufacturing of non-metallic minerals, manufacturing nec, and recycling	20, 26, 36–37	1.18
Construction	45	2.04
Sales, maintenance and repair of motor vehicles	50	1.36
Wholesale trade	51	3.50
Retail trade	52	1.37
Hotels, restaurants etc.	55	0.56
Renting machinery	71	0.71
Computer services	72	28.59
High skilled business services	741–744	6.23
Low skilled business services	745–748	4.93
Other services	93	3.20

Note: the values in the final column are the computer capital stock as a percentage of the total capital stock for 1999. Multiplying these percentages by the firm-level total capital stock for the year 1999 yields the firm-level capital stock of computing equipment in the same year. Using the price levels of total capital and of computers in 1999, one can calculate the share of computer capital in constant prices

Source: Statistics Netherlands, National Accounts (<http://statline.cbs.nl/Statweb/selection/?DM=SLNL&PA=82640NED&VW=T>)

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# Chapter 11

## Adapting Labour Markets for Demographic Change and Ageing

Cristina Martinez, Tamara Weyman, and Jouke van Dijk

In this final chapter we will make an attempt to synthesize the insights from the previous chapters into a comprehensive set of policy guidelines for a smart demographic transition. To assess the impact of demographic transition at the regional/local scale in a compact and comprehensive way, tools such a dashboard and spider diagrams can be used. The first two sections of this chapter will discuss a pilot dashboard presented for the Netherlands and Poland. In addition to that, indexes based on surveys reflecting Older Workers Friendly Places (OLWOF) and Work Elderly Friendly Places to Live (ELFRI) can be represented in the form of spider diagrams. To illustrate the usefulness, spider diagrams are shown for the case study regions in the Netherlands and Poland. The third section provides guidelines for demographic transition based on the proceeding chapters.

This book has followed an analytical framework based on the interaction of four key areas explained on the basis of Fig. 1 in the Introduction:

1. Population and health;
2. New sources of growth;
3. Skills ecosystems; and
4. Labour markets.

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The analysis of these four areas started in Chap. 1 with describing the main demographic trends at the country level. However, as argued by McCann in Chap. 2 the interplay of factors impacting demographic change are far more complex at the local and regional level, because of the much more differential impacts on shorter distances of migration and commuting. Therefore, cities and regions need to be analysed and compared in more detail. The preceding chapters have presented different scenarios of how demographic change and ageing are impacting labour markets, inclusive growth and economic development as a whole. Despite the capabilities we have today for analysing trend data that shows the age changes in the composition of our societies, strategic and policy approaches still largely undefined. At the regional and local level, the combination of population shrinkage and ageing brings profound challenges for nurturing talent for a dynamic workforce and for providing adequate public services, As a result the vulnerability of the small towns and rural areas increases and the lack of services for older citizens widens. To address this in an adequate way strategic approaches to demographic challenges require a re-positioning of labour markets towards sustainable strategies that promote resilience. A “whole-of-government” approach is needed to design at the national, regional and local lever economic development policies, population and health policies, labour market policies, and skills and education policies targeting sustainable and resilient communities. A holistic development approach that integrates economic growth, health, education, environment and other needs can produce higher quality outputs than stand-alone projects operating on a narrow spectrum of deliverables. This chapter reflects on these challenges and provides guidelines for a smart demographic transition.

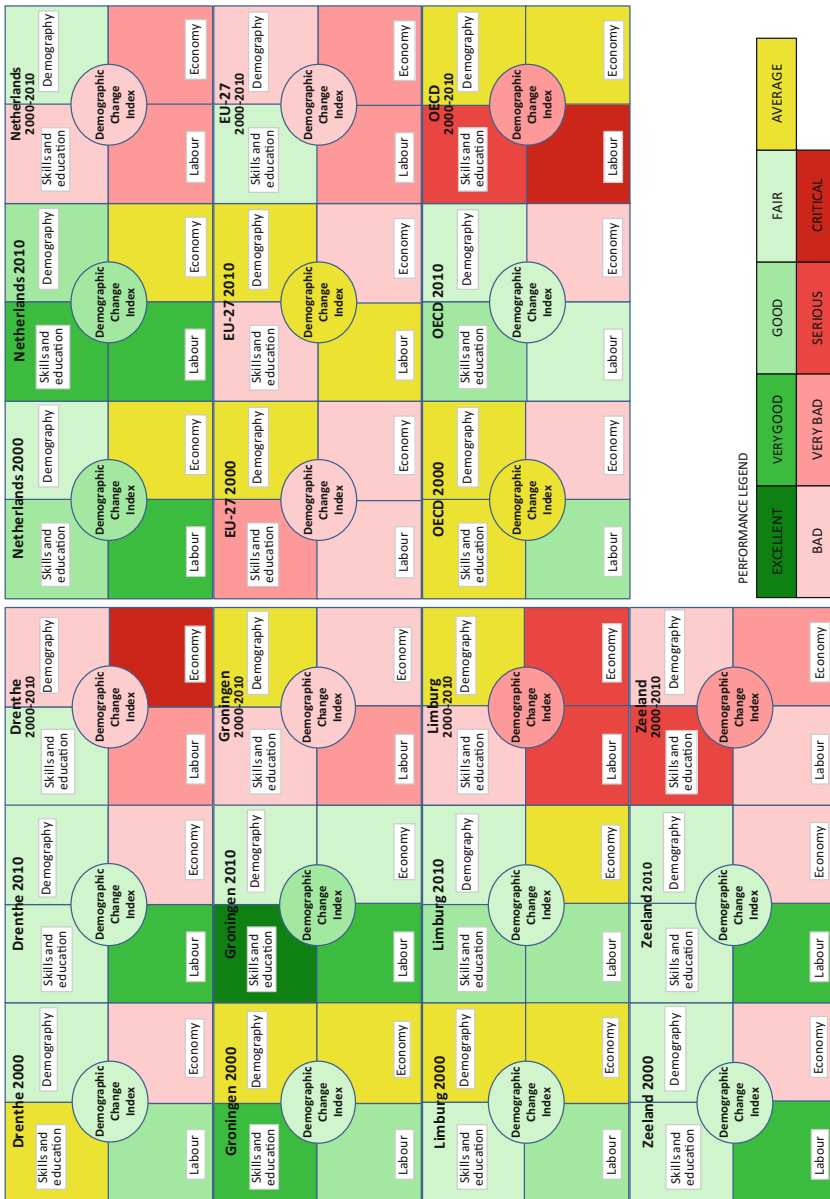
## 11.1 Using Data Dashboards to Prioritise Actions and Policy Responses

To illustrate the importance of addressing performance at the regional/local level, tools such as a dashboard can be used. Detailed background information about this tool can be found in Appendix 1. A pilot dashboard is presented in Fig. 11.1 with local data from the Netherlands and for Poland in Appendix 2. A dashboard shows a set of indicators in a simple pie chart based on three principles:

- The size of a segment reflects the relative importance of the issue described by the indicator composed from a set of focal indicators.<sup>1</sup>
- Colour codes signal relative performance, with green meaning “good” and red meaning “poor”.

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<sup>1</sup>In this instance, the authors considered each component equally important.



**Fig. 11.1** Netherlands case study regions: overall dashboard results. *Source:* OECD (2014), *Fostering Resilient Economies: Demographic Transition in Local Labour Markets*, available at: [http://www.oecd.org/cfe/leed/Fostering-Resilient-Economies\\_final\\_opt.pdf](http://www.oecd.org/cfe/leed/Fostering-Resilient-Economies_final_opt.pdf). Calculations based on OECD StatsExtract. Available at: <http://stats.oecd.org/Index.aspx>, accessed June 2012, Eurostat. Available at: [http://epp.eurostat.ec.europa.eu/portal/page/portal/statistics/search\\_database](http://epp.eurostat.ec.europa.eu/portal/page/portal/statistics/search_database), accessed June 2012 and Statistics Netherlands. Available at: [www.cbs.nl/en-GB/menu/home/default.htm](http://www.cbs.nl/en-GB/menu/home/default.htm), accessed June 2012

- A central circle, the Policy Performance Index (PPI), summarises the information from the component indicators; in this case, it is called the Demographic Change Index (DCI).

The dashboard is designed to assess the impact of demographic transition at a regional scale and over time between 2000 and 2010. Therefore, shades of green indicate good (positive) performance, while shades of red indicate poor (negative) performance. Overall, there are nine performance categories: excellent (dark green), very good, good, fair (light green), average (yellow), poor (light red/pink), very poor, serious, and critical (dark red).

The dashboard has five key components (Appendix 1):

- Demographic Change Index (overall summary)
- demography (population growth; age cohorts: 0–14, 15–64 and 65+; life expectancy; birth and death rates; fertility rates; and infant mortality)
- economy (primary income of households; GDP per capita; youth, elderly and economic dependency ratios)
- labour (employment rates: 15–64, 15–24, 55–64 age cohorts; and unemployment rates: 15–24, 55–64 age cohorts)
- skills and education (students enrolled in education as a percent of total population); students enrolled in tertiary education as a percent of total students); tertiary education attainment as a percent of employment and labour force); and participation of adults in education (by gender).

A constraint of implementing the dashboard was sourcing statistics that were comparable at the local level where territorial differences occur. Local statistics are highly important for informing local policy responses. *Governments need to make a proactive effort to collect consistent and comparable local data and provide a user-friendly portal for making that information available.*

Figures 11.1 illustrate the overall dashboard results for the years 2000 and 2010, and trends (2000–10) for the Netherlands' regions of Groningen, Drenthe, Limburg and Zeeland (Fig. 11.1) and also highlights the differences between the study regions in the Netherlands and compares regional performances with the national, EU27 and OECD results (Poland's dashboard can be seen in Appendix 2). Table 11.1 also underlines the regional differences in socio-economic performance and the need for territorial place-based approaches for managing demographic transition.

As can be seen with the overall dashboard results above, there are very different territorial demographic, economic, labour and skills differences as a consequence of the national and regional context. These territorial differences will be more pronounced at the local level, and as a result, territorial differences *require a strategic co-ordinated policy response that manages sustainable economic development not only on a regional basis, but also within the local context.*

**Table 11.1** Focal indicators (2000–2010) for the case study regions in the Netherlands

	Demography	Economy	Labour	Skills and education
Drenthe	Population growth; working-age population; infant mortality; crude birth rates; life expectancies	Primary income per household; GDP per capita; youth, elderly, and economic dependency ratios	Young adult employment, unemployment (overall, youth and older persons)	Tertiary education attainment (of employed and labour force)
Grongingen	Population growth; working-age population; life expectancies; crude birth rates; infant mortality	Primary income per household; youth and economic dependency ratios	Employment rates (overall and young adults); unemployment (overall, youth and older persons)	Students enrolled in education and tertiary education; tertiary education attainment (of employed); participation of female adults in education
Limburg	Population growth; working-age population; elderly population; crude birth rates; infant mortality	Primary income per household; GDP per capita; youth, elderly, and economic dependency ratio	Employment rates (overall and young adults); unemployment (overall, youth and older persons)	Students enrolled in tertiary education; tertiary education attainment (of employed); participation of male adults in education
Zeeland	Population growth; working-age population; life expectancies; crude birth rate; infant mortality rate	Primary income per household; GDP per capita; youth, elderly, and economic dependency ratios	Unemployment (overall, youth and older persons)	Students enrolled in tertiary education; tertiary education attainment (of employed); participation of adults in education

Source: OECD (2014), *Fostering Resilient Economies: Demographic Transition in Local Labour Markets*, available at: [http://www.oecd.org/cfe/leed/Fostering-Resilient-Economies\\_final\\_opt.pdf](http://www.oecd.org/cfe/leed/Fostering-Resilient-Economies_final_opt.pdf)

## 11.2 Ageing Communities Require More Actions for the Development of Age-Friendly Cities and Working Places

As mentioned before demographic trends in the case study regions are specifically related to the ageing of the population, which is creating challenges for the national and regional economies to develop age-friendly cities and policy measures. The World Health Organisation (2007) definition states that an age-friendly city encourages: "... active ageing by optimising opportunities for health, participation and



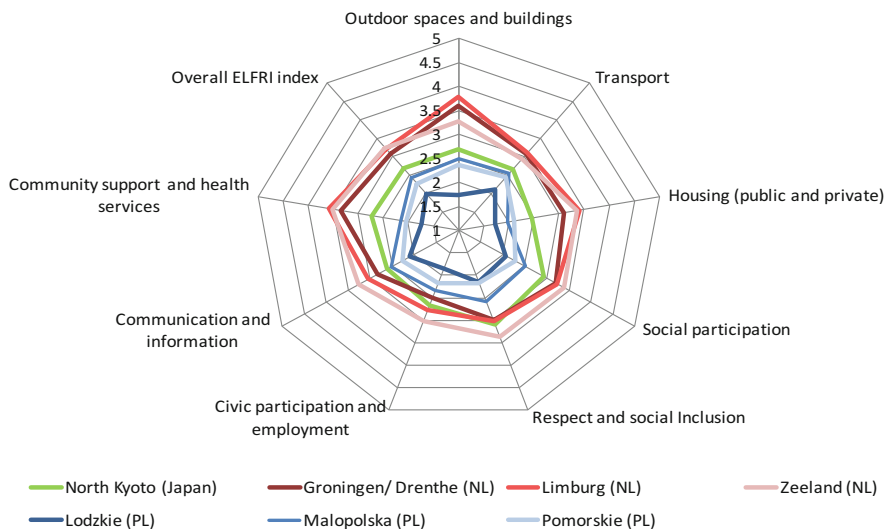
security in order to enhance quality of life as people age” and thus “...in an age-friendly city, policies, services, settings and structures support and enable people to age actively by: recognising the wide range of capacities and resources among older people; anticipating and responding flexibly to ageing-related needs and preferences; respecting their decisions and lifestyle choices; protecting those who are most vulnerable; and promoting their inclusion in and contribution to all areas of community life”. In order to get insight in these processes and to monitor evolving trends adequate statistical information is needed and this needs to be presented in a way which is suitable for policy purposes.

To develop this two indexes were piloted during workshops conducted in case study regions of the OECD-project: the Netherlands (Drenthe/Groningen, Limburg, Zeeland), Poland (Łódzkie, Małopolska and Pomorskie); Japan (North Kyoto) (See Sect. 6.1.6). The participants, who were representatives of various public administrations and organisations, were asked to complete two surveys:

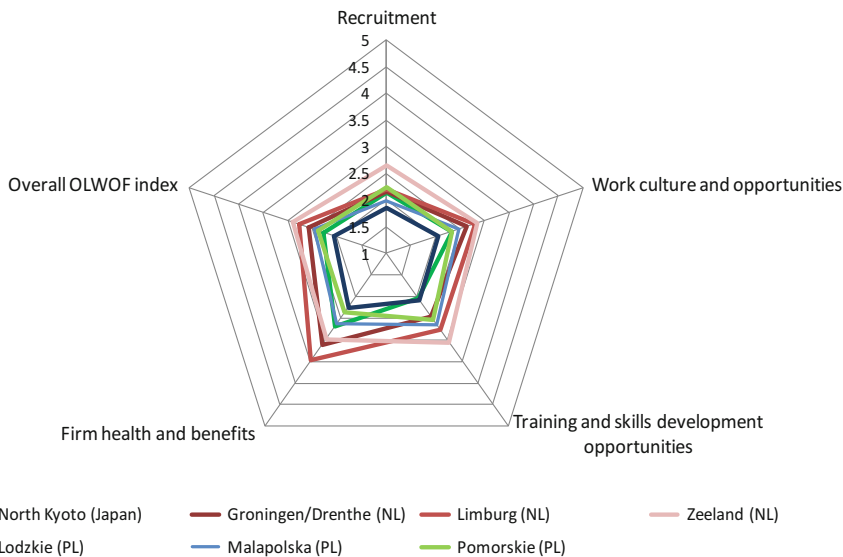
- Older Workers Friendly Places to Work (OLWOF) about the labour market situation of elder workers, consisting of the following categories: recruitment, work culture, training and skills development opportunities, and company health and benefits.
- Elderly Friendly Places to Live (ELFRI) about quality of life facilities for elderly, consisting of the following categories: outdoor spaces and buildings; transport; housing; social participation; respect and social inclusion; civic participation and employment; communication and information; and community support and health services.

The indexes can be represented in the form of spider diagrams and are another strategic tool for communities to plan adjustment of their physical and social infrastructure to an ageing society, see Figs. 11.2, 11.3, 11.4. The difference between the overall and the importance ratings reflects a policy gap between the reality of the situation and what should occur and the significance of achieving friendly places to work for older persons, and thus providing a policy focus within the areas of recruitment, work culture, skills and training, and firm health and benefits.

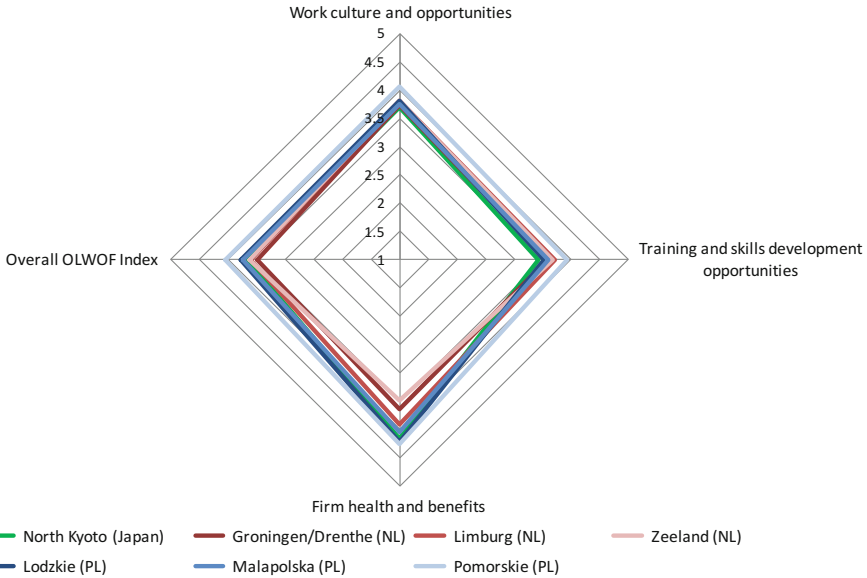
These pilots of policy indexes emphasise the need for focusing on a territorial regional and local age management policy, highlighting that it is not just a national challenge, but a challenge that filters down to local communities. Regional and local areas require place-based development that is contextually focused on resilient communities, which are not only sustainable, but also inclusive. Age management practices should not only be encouraged, but actively promoted, in areas such as workplace flexibility and inter-generational engagement, lifelong learning, entrepreneurship, and active and healthy lifestyles.



**Fig. 11.2** ELFRI Index results. Note: NL (Netherlands), PL (Poland). *Source:* OECD (2014), *Fostering Resilient Economies: Demographic Transition in Local Labour Markets*, available at: [http://www.oecd.org/cfe/leed/Fostering-Resilient-Economies\\_final\\_opt.pdf](http://www.oecd.org/cfe/leed/Fostering-Resilient-Economies_final_opt.pdf)



**Fig. 11.3** OLWOF Index results. Note: NL (Netherlands), PL (Poland). *Source:* OECD (2014), *Fostering Resilient Economies: Demographic Transition in Local Labour Markets*, available at: [http://www.oecd.org/cfe/leed/Fostering-Resilient-Economies\\_final\\_opt.pdf](http://www.oecd.org/cfe/leed/Fostering-Resilient-Economies_final_opt.pdf)



**Fig. 11.4** OLWOF importance rating. Note: NL (Netherlands), PL (Poland). Source: OECD (2014), *Fostering Resilient Economies: Demographic Transition in Local Labour Markets*, available at: [http://www.oecd.org/cfe/leed/Fostering-Resilient-Economies\\_final\\_opt.pdf](http://www.oecd.org/cfe/leed/Fostering-Resilient-Economies_final_opt.pdf)

### 11.3 Guidelines for a Smart Demographic Transition

This book has discussed demographic transition as a process where decreasing fertility and increasing life expectancy are reshaping the age structure of populations; older age groups are increasing, whilst younger groups are in decline. Demographic transition has critical consequences for labour markets and income security, with concerns about ageing of the labour force and an increase in old-age welfare dependency ratios leading to efforts by national policy makers to make social welfare systems sustainable by pushing back the age limit for legal retirement. In addition to that aging may affect labour productivity and population decline and migration may affect the location of higher educated individuals and thus the quality of human capital in a region. As a consequence:

- Although the labour market issues in declining regions are essentially not different from national issues, the interrelationship between local economic development and demographic transitions are far more complex at the local level than at the national level, because of the differential impacts of migration on the supply of local human capital. Therefore, the regional and local context demands tailor-made place-based solutions for each region.
- Declining regions are often frontrunners in the demand for new policies, due to their more advanced stage in the ageing process and the relatively higher vulnerability of their populations.

- Regional and local policy makers and public and private strategy stakeholders should combine their knowledge and resources for innovative initiatives and solutions. Policy departments and different levels of government are often challenged by horizontal and vertical collaboration due to the rigidities of institutional silos. Thus, specific instruments for inclusive governance need to be designed paying attention to the process of policy design as much as to the end policies proposed.

Despite the severity of the global trends and the difficulties in reversing these trends in the short term, local institutions and stakeholders can and should enhance their pathways for sustainable development through smart management of their demographic transition. The case study chapters revealed policy responses that are important for national, regional and local context. These policy responses can be grouped around five overarching and inter-connected responses proposed as guidelines in this chapter (Table 11.2), the table highlights (with ‘✓’) which guidelines applies the each of the case studies represented in this book.

### ***11.3.1 Guideline 1: Designing Strategic and Localised Solutions for Territorial Differences***

The Polish and Dutch case studies that are presented in the Chaps. 3 and 4 can be summarized in so-called dashboards (see Fig. 11.1 in Sect. 11.1 and Appendix 2) that clearly show the complexity of the demographic challenges occurring within the regions, with each region experiencing different issues associated with its socio-economic situation. Demographic and economic decline is more likely to occur in peripheral regions with a limited economic structure, where there is dominant industry. Central urban regions with a diverse economic structure and/or regions with large sectors such as business services, industry or logistics, seem less vulnerable to demographic and economic decline. Territorial population decline and population ageing is having, and will continue to have, social and economic consequences for national, regional and local labour markets. Consequences include:

- A decreasing potential labour force, due to the declining numbers of youth and stagnating working-age population, leading to a dwindling labour supply, a tight labour market and more competition for workers, or even labour shortages.
- A decrease in industrial activity and business vitality as firms relocate or shift activities from shrinking regions to growing ones because of labour market issues.
- A decrease in the population and the number of households implies a smaller local market and may lead to an oversupply of services and housing. Such a surplus in housing may in turn result in vacant properties.

**Table 11.2** Key guidelines

Guidelines	Poland	Netherlands	China	Japan	Sweden	United States	South Korea
<b>Guideline 1. Designing strategic and localised solutions for territorial differences</b>							
Develop processes to ensure quality local population forecasting	✓					✓	
Implement strategic, co-ordinated policy response		✓		✓			
<b>Guideline 2. Implementing a place-based approach for resilient and inclusive communities</b>							
Long-term and comprehensive sustainable economic development strategies	✓		✓	✓			
Creating family policy for friendly communities	✓		✓				
Invest in early healthy lifestyles and active communities	✓	✓			✓		
Supportive personal and social networks		✓	✓	✓			
<b>Guideline 3. Encouraging inter-generational solidarity for ageing societies and labour markets</b>							
Promote inter-generational engagement and a new work continuum		✓		✓			✓
Implement programmes for activation and integration in the workplace		✓			✓		✓
Reform workforce age management practices	✓	✓			✓		✓
<b>Guideline 4. Creating dynamic and responsive labour markets that address demographic and economic transitions</b>							
Create policy dialogue that encourages governmental coherence	✓	✓		✓	✓		
Develop new local workforce ecologies within entrepreneurship, SMEs and workforce flexibility		✓					
Embrace new sources of growth by identifying opportunities and innovations in local labour markets	✓	✓	✓				

(continued)

**Table 11.2** (continued)

Guidelines	Poland	Netherlands	China	Japan	Sweden	United States	South Korea
Guideline 5. Generating innovative skills ecosystems: Skills capital for local communities							
Create lifelong learning culture for youth, adults and older persons	✓	✓			✓		
Connecting education/skills development institutions with local labour markets developing a local skill ecosystem)	✓	✓		✓	✓	✓	

Source: Author

- Local services (e.g. infrastructure, transport, care) will become more expensive as demand in shrinking regions is expected to increase due to the ageing population with a simultaneous decrease in labour supply and eroded tax base as the population declines.
- Skills ecosystems weaken as the private sector and skilled labour force thin-out, also due to selective outmigration of young talented people.

Strategic solutions must take into account the interplay of elements within a particular local area of development and encompass both local and regional capacity to attract and generate jobs within the national and economic context. Across Europe, there have been different approaches to public policy aimed at drawing more people into regional workforces and sustainable employment, such as regional economic restructuring; improved skills and training; inward migration and workforce mobility. At the same time, there are opportunities to be fostered, such as the development of the silver economy of older entrepreneurs, the white economy of medical services for the elderly population, and the natural green economy.

The need for holistic, but individualised, solutions that respond to the specific needs of the local community and labour markets need to be based on national/regional/local partnerships. The national-local axis requires systematic consideration for policy delivery. Due to socio-economic differences, regional systemic and sustainable strategies should primarily be explored, developed, implemented and reviewed, focusing on the key aspects that make the region unique. Essential measures for a strategic framework that provides the starting point and guidance for future projects and initiatives for regions include:

- Developing regional networks for local action in order to establish national and regional policies for demographic transition. Sharing experiences and community consultation on demographic change is necessary in order to raise the awareness of local authorities and businesses regarding the impact these changes will have on the labour market and economy.

- Strategies that are place-based and highly contingent on context (instead of place neutral). These should consider economic, social, political and institutional diversity in order to maximise both the local and the aggregate potential for economic development.
- A territorial approach that takes into account the demographic diversity of shrinking and predicted potentially shrinking municipalities. Policies should anticipate demographic decline in order to combat it. Municipalities, as well as the business community, should manage with less people; support people and families who want to stay; and provide a living environment that continues to appeal to existing and potential new residents—in particular, those in the 20–65 year-old age group, in order to maintain and potentially increase the labour force. Local communities should be made aware of not only the challenges, but also the opportunities inherent in local shrinkage, through education campaigns and raising awareness of innovative thinking and options.

For this reason, specific policies for demographic change need to be tailored to a comprehensive local strategic approach employing a multitude of efforts, such as greening, revitalisation, economic development and social cohesion. Four interconnected policy themes that are vital for regional/local communities and labour markets attempting to manage a shrinking and ageing society which will be discussed in the following sections:

1. resilient and inclusive communities
2. inter-generational solidarity
3. dynamic and responsive labour market
4. skill ecosystems.

It is important to realise that local programmes for declining and ageing areas need to be supported, as noted by the URBACT II publication (Schlappa and Neil 2013): “cities cannot tackle shrinkage alone, regardless of whether they are large or small . . . while the horizontal integration of social, economic and environmental action is of course essential at the local level, vertical integration of policy by different levels of government is equally important”. Support and policy response should not only come from the local, regional and national governments, but also supra-national authorities such as the EU for developing regions. However, to develop demographic transitional strategies, the quality of local population forecasting has to be improved. A common legal framework for small-scale surveys; a set of indicators for demographic change, which is simple to use and update; and co-ordination and co-operation to ensure consistency and synergy of data are needed. This would allow the development of a local urban perspective in planning policies and decision-making processes.

### ***11.3.2 Guideline 2: Implementing a Place-Based Approach for Resilient and Inclusive Communities***

Local communities facing demographic changes respond in different ways. In some cases, regeneration tries to address social phenomena while in others major economic changes are responsible for outward migration of large population numbers from the local area. A diversity of actions is needed, as well as the interrelation of elements, for effective strategies to occur. Notably, many of the regeneration strategies try to re-orient the paradigm of growth to pragmatic downsizing, while in other cases the focus is on improving residential housing and living conditions, strengthening future socio-economic structures, and improving urban governance. Some countries continue their efforts towards brownfield site regeneration, social planning and housing policy, while others think in terms of a new urban governance system, regeneration strategies and new development models for residential use (Martinez-Fernandez et al. 2012). There is a need to give priority to improving local living conditions (housing, public space), which could serve the needs of the existing population and attract new inhabitants, such as increasing the quality of the housing stock to help retain the most well-off population, and maintaining the provision of social housing to avoid the displacement of low-income households.

The local level is the place where development actions are implemented, is increasingly important to the socio-economic environment; contributes to national economic performance; and has a critical role in job creation and skills development and retention. “Local development is about building capacity of a defined territory to improve its economic future and quality of life for the inhabitants” (Martinez-Fernandez et al. 2012). It is about building community capacity so citizens are more able to confront economic and social challenges by inclusive involvement, which enables all members of the community to contribute to local development (OECD 2009). The local dimension is of key importance in responding to demographic transition; it is about the activation of citizenship and local leadership. As Schlappa and Neil (2013: 26) noted “. . . citizen engagement is essential for developing a meaningful and realistic strategy, and deep collaboration between public agencies and citizens may make the difference between success and failure . . .”.

There are four key approaches to resilient and inclusive communities:

1. implementing sustainable economic development
2. creating family policies for friendly communities
3. investing in healthy lifestyles and active communities
4. supporting personal and social networks in fostering vitality of places.



### 11.3.2.1 Implementing Sustainable Economic Development for Managing Demographic Transition

For countries that are experiencing demographic change such as population decline and ageing, a more sustainable economic development approach is needed for regional and local areas. For example, demographic changes such as population decline in Łódzkie (Poland), and population ageing, low fertility and migration faced by Małopolska and Pomorskie, are key challenges faced by their regional governments. However, due to their socio-economic differences, regional systemic and sustainable strategies should first be explored, developed, implemented and reviewed, focusing on the key aspects that make the region unique. There is a need to employ sustainability measures for declining areas by diversifying local utilisation of natural resources by incorporating other values in addition to the industrial ones, such as offering sustainable environments for housing and nature tourism businesses. Box 11.1 highlights the importance of sustainable development at a local community level.

#### Box 11.1 Place, Space and Sustainable Development

The importance of sustainable development underlines the need to adopt a long-term approach that considers economic, social and environmental issues at the same time. The twin effects of demographic change and shrinkage are a complex and multi-dimensional process and, increasingly, a worldwide phenomenon. However, the local level stands as a fundamental level of analysis and policies. Local governments and organisations are expressing a strong need for expertise to deal with associated challenges, particularly regarding local labour markets.

The process of urban shrinkage is one of the products of the inter-relationship between globalisation, deindustrialisation and demographic change. It creates a negative spiral of unemployment, loss of services, deterioration of infrastructure and housing, loss of amenities, negative image of territories (due to the deterioration of the surrounding environment), often leading to the outward migration of young and skilled inhabitants and to the difficulty of attracting new people. In the end, this creates a phenomenon of socio-spatial segregation.

To address territorial shrinkage, there are several aspects of possible policies and strategic approaches that can be suggested. Policies should foster social innovation, which could provide fresh ideas to manage shrinkage, particularly through new participants such as social entrepreneurs and social enterprises (Noya 2009). Challenges can be turned into opportunities, through multi-dimensional and innovative approaches. In addition, social innovation could be embedded in the policy strategies to foster, for example, the silver economy, green growth or smart planning in view of population decline.

(continued)

**Box 11.1** (continued)

Including multiple participants is important; this includes new private players, such as social entrepreneurs, together with other public stakeholders (national and local), business, education and training organisations, trade unions and non-governmental organisations (NGOs). The necessity of policy co-ordination and coherence, particularly between the national and the local level, is crucial to increase the effectiveness of policy delivery and the implementation of programmes and strategies by local actors.

*Source:* Martinez-Fernandez, C., N. Kubo, A. Noya and T. Weyman (2012), *Demographic Change and Local Development: Shrinkage, Regeneration and Social Dynamics*, OECD Publishing, Paris, <http://dx.doi.org/10.1787/9789264180468-en>; and

OECD, (2011a), “Summary note of OECD workshop”. OECD workshop on “Policies and Strategies for Demographic Change: Skills, Employment and Sustainable Development”. 20 June. OECD, Paris.

Essential measures for a strategy that provides a starting point and guidance for future projects and initiatives for regions include:

- settling new immigrants;
- improving and promoting transport accessibility;
- creating family-friendly communities;
- supporting entrepreneurship, small and medium enterprises (SMEs), and research and innovation;
- stronger local job creation.

Importantly, for regions where the population is shrinking, addressing the issue of sustainable development is not all about “growth”; a paradigm shift is required in some instances that calls for different instruments and strategies more anchored to the local situation and manifestations of shrinkage (Martinez-Fernandez et al. 2012). Therefore local strategies of urban restructuring can prepare declining areas for the consequences of demographic change and urban shrinkage, and offer favourable conditions for new development opportunities. Schlappa and Neil (2013: 29–30) noted the importance: “re-imaging or repositioning a city in the minds of citizens is the foundation of creating and maintaining place identity . . . the aim should be to create a dialogue among local stakeholders”. Regeneration strategies need to be long term and have a comprehensive strategic agenda, focusing on a detailed analysis of the conditions of the urban area and the interactions of its citizens and institutions. They need to integrate economic, socio-educational and urban policies, and consolidate efforts in relation to innovation, entrepreneurship and human capital. Strategies should be aimed at improving the physical, social and economic conditions and at environmental amelioration, to achieve better urban quality. Specific policies for regeneration require robust and flexible strategies that encourage creative solutions;

a model of urban governance with a clear vision and operational objectives incorporating local, regional and inter-municipal co-operation; the integration of multiple public and private stakeholders.

### 11.3.2.2 Creating Family Policies for Friendly Communities

The case study countries of Korea, Japan, Poland and the People's Republic of China are experiencing falling fertility rates; those of the Netherlands and Sweden, although still below replacement levels, seem to have stabilised. According to the *OECD Factbook* (2013a), "... fertility is an element of population growth, which reflects both the causes and effects of economic and social developments". As illustrated in Fig. 1.3, fertility rates are either declining significantly or have stabilised below the replacement level, which is 2.1 children per woman. "Generally total fertility rates in OECD countries have declined dramatically over the past few decades, falling on average from 2.7 in 1970 to 1.7 children per woman of child-bearing age in the 2000s" (OECD 2013a). Korea's fertility rate was 1.1 in 2006 and has since stabilized at 1.2 (2010). Fertility rates in Poland, and more specifically in rural and urban centres, have been below replacement level for the last two decades. The fertility rate is more serious in the large cities, with all three capital agglomerations of Łódzkie (Lodz), Małopolska (Cracow) and Pomorskie (Gdansk) being characterised by very low fertility rates over a long period (since the 1960s).

The challenges of low fertility tendencies need a long-term and stable family policy supporting parenting decisions by creating the conditions to ensure that more children are born, and improving the quality of life and reducing poverty among families. Successful family policy requires state-level legislative initiatives to support regional and local efforts to reverse negative trends (OECD 2011b).

"... fertility rate recovery is no longer a real possibility without extensive and intense child care and work-life balance facilities..." (INTERREG IV C and European Union 2012). The focus should be on policies that better support families, in particular better conditions for working parents and for those entering the labour market. Increasing awareness of the need to support families in the public and private sectors and the need for flexible access to childcare are keys for family policy. Institutional supportive structures that promote family values, monitor family situations and recognise problems are required, such as financial assistance, social infrastructure and flexible forms of employment and workplaces. The six main aims of family-support policies in OECD countries (Thévenon 2011):

- Poverty reduction and income maintenance;
- Direct compensation for economic cost of children;
- Foster employment;
- Improve gender equality;
- Support for early childhood development;
- Raise birth rates.

Successful family policies require a national long-term policy whereby regions are supported by central area initiatives “. . . that recognise the changing nature and diversity of family structures and forms, and geographical distances that prevent families from providing care and support to their dependent relatives.” (p. 8).<sup>2</sup> National policy needs to take into consideration the diversity of the family unit across their respective countries (rural/urban) and allow flexibility for intra-regional differences. Appendix 3 provides an example of national and local level family policy initiatives.

### 11.3.2.3 Investing in Healthy Lifestyles and Active Communities

To get insight in the characteristics of places that are important for elderly people, specific questionnaires were held in the case study regions. The results can be summarized in terms of Elderly Friendly Places to Live (ELFRI-index), consisting of the following categories: outdoor spaces and buildings; transport; housing; social participation; respect and social inclusion; civic participation and employment; communication and information; and community support and health services. The Elderly Friendly Places to Live (ELFRI) Index<sup>3</sup> (See Sect. 1.2) revealed alarming results regarding community support and health services, social participation and civic participation, all of which negatively impact on healthy lifestyles and active communities for the elderly. The DART project noted that “. . . the increasing life expectancy, the superannuation of the population and the decreasing birth rates pose a challenge for healthcare systems” (INTERREG IVC and European Union 2012: 22). Schlappa and Neil (2013: 37) identified synergies between healthy, age-friendly and child-friendly cities:

- A healthy city creates and improves its physical and social environments, and expands the community resources that enable people to support each other mutually in performing all the functions of life and developing to their maximum potential.
- An age-friendly city is one where the physical and social environments enable people to remain healthy, independent and autonomous long into their old age. Older persons play a crucial role in their communities—they engage in paid or volunteer work, transmit experience and knowledge, and help their families with caring responsibilities. They can only make these contributions if they enjoy good health and if societies address their needs.
- A child-friendly city strives for non-discrimination; clear accountability for children’s rights as well as safe, green environments.

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<sup>2</sup>[www.age-platform.eu/images/stories/EN/CoverAGE/EN/21879\\_brochure\\_age\\_2010\\_en.pdf](http://www.age-platform.eu/images/stories/EN/CoverAGE/EN/21879_brochure_age_2010_en.pdf)

<sup>3</sup>Elderly Friendly Places to Live (ELFRI), consisting of the following categories: outdoor spaces and buildings; transport; housing; social participation; respect and social inclusion; civic participation and employment; communication and information; and community support and health services.

Promoting community's state of health, especially within an ageing society, is an important place-based approach. Early release from the workplace can often be the consequence of a person's poor health. The need for new services in areas such as education, entertainment/leisure, information technology, financial services and transport, can encourage longer, healthier and more active lifestyles by creating family-friendly environments and active policies to improve living opportunities for the elderly. The ageing of the population structure will increase the demand for new social services and the health sector. The issue becomes greater within territorial areas with shrinking populations because services will become more expensive for consumers due to increased demand and a decreased labour supply. The delivery of care services should put an emphasis on flexibility and financial effectiveness, and promote opportunities for some services to be delivered by social enterprises.

According to Ahtonen (2012), creating a European society that promotes healthy and active ageing demands the following actions:

1. increasing healthy life expectancy: health and disease prevention must be promoted
2. creating age-friendly environments: addressing issues such as transport, infrastructure, pollution, housing, public spaces and services; and
3. increasing the retirement age and the labour market participation rate: more discussion is needed on making early retirement less flexible and later retirement more feasible, abolishing mandatory retirement ages, managing the transition between work and retirement, maximising volunteering and second career opportunities after retirement, and changing employers' and employees' attitudes to part-time work and longer careers.

Early investment in healthy lifestyles and active communities, which incorporate new approaches to the development of infrastructure and the provision of services, are designed to reduce medical costs in later life. Such investments include: community-based agencies for health and social support; facilitating non-profit/voluntary efforts; and fostering local resource sharing. The importance of continued resources and support to the white sector<sup>4</sup> is of utmost importance considering the ageing of the population. Developing health clusters would assist by creating a network and pooling resources for the benefit of the community. Appendix 4 outlines international initiatives in facilitating and promoting healthy and active lifestyles.

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<sup>4</sup>“White economy” refers to those products, services and activities related to healthcare and care including the dependent, disabled and the elderly.

#### 11.3.2.4 Supporting Personal and Social Networks in Fostering Vitality of Places

The youth populations in many of the case study regions are declining or have stagnated, young families are leaving regional areas for better opportunities in education and employment, while at the same time, population ageing continues. According to Martinez-Fernandez et al. (2012), the complexity of the interaction between demographic change and shrinkage is especially witnessed when the social dynamics are considered. Keeping social cohesion and developing new social dynamism in shrinking areas, where the economic and social fabrics are eroded and where groups at risk of exclusion live (elderly, lone parents, long-term unemployed) requires a set of integrated approaches.

Social inclusion is important within the dynamics of demographic change to allow local populations to take an active part in the economic and social life of their community. Involving people will help build trust in the community and has the potential to influence individual decisions about whether to stay or leave the area. Social inclusion can also contribute to the community learning process by helping people understand how society works and how they can improve their own lives. Co-constructed, holistic policies and socially innovative practices and programmes are needed to provide services to the elderly, to families and the excluded. Social innovation, which aims to improve the quality of life of individuals and communities, has a central role to play in addressing these issues. Intangible factors such as culture and creativity can be excellent levers for the revitalisation of shrinking areas, and skills development and transfer can harness capabilities in shrinking areas. Efforts should also focus on encouraging the existence of personal networks and personal attachment to the area, for example, if a person has roots in the area they might be willing to continue their life there so relatively less energy is required to attach them to the area (Musterd and Murie 2010; Musterd and Kovacs 2013). Policy makers must recognise the importance of the vibrant socio-cultural climate in urban areas in order to promote the quality of life and economic prosperity of the city. Public policy should not only focus on places or industries, but on people as well, creating opportunities for people to exercise their creativity.

There is a need to invest in social and prosperous communities to maintain and increase the vitality of places and encourage personal networks and/or attachments, which stimulates the business environment and improves quality of life, entrepreneurship and innovation. All are factors that can foster resilience in shrinking areas. Investments can be in the form of institutional assets that are located in shrinking places and that can act as “magnet infrastructure” (e.g. a new educational institution or a cultural landmark) as well as digital media to be used in promoting inter-generational (alumni) and social networks. Good communities nurture entrepreneurship and healthy lifestyle living conditions.

Good examples of investing in culture and social networking can be seen in the city of Heerlen in the Parkstad Limburg Region in the south of the Netherlands, which is experiencing a declining population (Box 11.2). Universities also play a

role in the community because, although they are part of the essential infrastructure, “. . . their students create buzz and liveliness in the cities in which they are located, and through that they significantly contribute to the attractiveness of many cities. In addition to direct economic advantages (R&D, spill-over, etc.), universities might also be indirectly beneficial for local economies because students develop important networks during and after their study, including business and personal networks. Students are often attached to the city in which the university is located. This offers opportunities for local policies to retain them for the city” (Musterd and Kovacs 2013). An innovative example is from Kyoto, Japan, called CUANKA (a Platform of Community and University Alliance for Regeneration of Northern Kyoto, see Chap. 6).

### **Box 11.2 Culture and Social Networks in Heerlen (Netherlands)**

The Zachte G Network for Creative Economy is a virtual, open web platform in which inhabitants can display their talent and work. It provides a climate in which there is room for initiative, experimentation and diversity and contributes to forming new networks for young talented people. Zachte G also promotes engagement and discussion on issues relevant to the region.

The Design for Emptiness Challenge is a strategy to increase the involvement of creative professionals in the issue of vacancy. The Zachte G community was challenged to propose concepts, ideas or strategies that provided creative solutions for vacant buildings in the city centre. The challenge was intended to change the mindsets of authorities and provide recognition that young professionals, artists or cultural producers can bring financial, creative and social capital to the inner city. In December 2010 the winners opened their fashion and art shops.

*Source:* Martinez-Fernandez, C., N. Kubo, A. Noya and T. Weyman (2012), *Demographic Change and Local Development: Shrinkage, Regeneration and Social Dynamics*, OECD Publishing, Paris, <http://dx.doi.org/10.1787/9789264180468-en>.

### **11.3.3 Guideline 3: Encouraging Inter-generational Solidarity for Ageing Societies and Labour Markets**

The ageing of the population and increasing life expectancy will have a growing impact on the interactions between generations, especially within local labour markets. The Korean chapter (8) highlighted the fast pace of ageing whereby older people aged over 65 was 7% in 2000, expected to double by 2018 and will hit 20% by 2026. According to INTERREG IVC and European Union (2012: 10), over “. . . the next 20 years, the ageing process in Europe will speed up considerably. . . . The share of the old population in the overall population will increase . . . from 17.4 to 23.6%”. With the population ageing, inactivity of older age groups will

increase the strain on social security and pension systems. Inter-generational solidarity:

... means different things to different people. To some, it simply means that different age groups have a positive view of one another, which raises the important issue of the degree to and the way in which different generations interact. Others stress the importance of consensus between generations on the best way forward.

These are examples of the view that inter-generational solidarity is a desirable value in itself. Another perspective is that inter-generational solidarity is a means to an end: a mechanism for supporting mutually beneficial exchanges between generations. In addition, involving multiple generations allows rights, responsibilities and risks to be shared. Because needs and resources vary across the lifecycle, each generation potentially gains from such exchanges. They can go in both directions. Forwards, towards younger generations, are investments in child-care and education, infrastructure, innovation and environmental protection. Backwards, to older generations, are pensions and care for older people.

This perspective on inter-generational solidarity highlights the social and economic policy issues. The family and the government are the best institutions for making this inter-generational exchange work. The market is less able to do so because youngsters and the unborn cannot sign contracts. However, the “third sector”—charities, voluntary associations and so on—can also help foster inter-generational solidarity. (OECD 2011c: 5).

There are three key policy responses to manage inter-generational solidarity for ageing societies and labour markets:

1. promoting a new work continuum: longer employment and increased productivity
2. implementing programmes for engagement and integration in the workplace
3. reforming workforce age management: workplace perceptions and designs

### **11.3.3.1 Promoting a New Work Continuum: Longer Employment and Increased Productivity**

To get insight in the characteristics of places that are important for longer employment and labour productivity for elderly people the Older Workers Friendly Places to Work (OLWOF) Index<sup>5</sup> was carried out in the case study regions (see Sect. 11.2) revealed dire circumstances for older workers in regional areas, with recruitment, work culture and opportunities, and training and skills development opportunities all receiving below average to poor results. Bertelsmann Stiftung and European Policy Center (2013: 8) identified key barriers or disincentives to employment for older persons:

- Health: enable longer working lives. Poor health and mental illnesses due to stressful working conditions are a common factor leading to workers’ withdrawal from the labour force.

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<sup>5</sup>Older Workers Friendly Places to Work (OLWOF), consisting of the following categories: recruitment, work culture, training and skills development opportunities, and company health and benefits.



- **Qualification and skills:** ability to work at an older age. Workers' ability to obtain and further develop skills throughout their working lives. Older workers are often at risk of suffering from outdated skills, while there are fewer lifelong learning opportunities offered to them.
- **Motivation, job satisfaction and employers perceptions.** These factors directly influence workers' propensity to continue employment, such as prejudice and stereotypes about skills and productivity.
- **Age-appropriate workplace settings and the quality of work.** This is a key element when trying to retain an ageing workforce and its productivity. While larger companies might have the financial resources to adjust job profiles to an ageing workforce and implement age-management measures, smaller firms often are unable to cope with these tasks and costs. The employee also may take prevalence of taking over care responsibilities for family members. If work is incompatible with family responsibilities, remaining in employment could be difficult for older workers.
- **Labour market and social security regulations,** such as formalised early retirement schemes and pension systems combined with reduced activation efforts by public employment services and wage profiles, could lead to premature lay-offs and preferred early retirement.

There is a tendency for older workers to retire relatively early, either because they have reached retirement age or have a preference to stop working, especially for workers in physically demanding jobs such as constructions. For higher educated workers the opposite might be true. University professors, for instance, continue working till their seventies, although often part time. Governments are in the process of raising the retirement age and, although this will increase labour participation among the older age cohorts, it will not fully compensate for the expected decline in the potential labour force. Nevertheless, the raising of the retirement age will place less pressure on national old-age entitlements and encourage longer and more active working lifestyles. Another reason that older workers leave the workplace is the increasing competition from younger and better educated persons, the widespread use of technology, and unsupportive work cultures and behaviours. Encouraging companies to implement age management practices such as flexible working hours, opportunities for older workers to update their skills, and better health and/or safety programmes would encourage older workers to stay within the working environment. In this context it is an interesting empirical result presented in Chap. 10 that more older workers has a positive effect on the growth of labour productivity at the firm level. This is in line with the results reported for Sweden by Malmberg et al. (2008) that ageing does not have a negative effect on productivity growth. This can be explained by the so-called Horndal effect where the accumulated work-experience and firm specific knowledge of older workers compensates for possible negative ageing effects such as lower flexibility and willingness and ability to learn new things (Genberg 1992).

There is a need to encourage a new work continuum ranging from full-time to part-time employment options for companies, governments and other sectors, to

extend the length, variety of and engagement in working life, leading to longer employment and increased productivity for people across all sectors. This will extend the working age while allowing people to meet the requirements of family and community and will, in turn, improve personal, family and community health. Inter-generational engagement in changing working conditions also needs to be taken into account. The results in Chap. 10 show that a rise in working hours of existing employees will raise their productivity in the Netherlands. This finding might be typical for the Netherlands since actual working hours of existing employees in the Netherlands are already relatively low to start with. This implies that less part time work will increase the growth of real labour productivity.

Governments and companies can play a role in facilitating work after retirement. Governments can offer tax incentives, while companies can offer flexible work arrangements to help keep knowledgeable and experienced workers. Appendix 5 highlights some examples, projects and initiatives along these lines. Promoting a new work continuum would provide opportunities for the younger generations to interact and learn from their older co-workers/mentors.

### **11.3.3.2 Implementing Programmes for Engagement and Integration in the Workplace**

Demographic change, population ageing, a declining youth population and shrinking working-age population all have potential consequences for national, regional and local labour markets. For example, Sweden is expecting a generational shift in the labour market, with expected retirements from 2011 to 2025 resulting in labour force stagnation or decline. The generation shift will impact industries and regions. Although some metropolitan areas' labour force will increase, others will experience a significant impact resulting in labour shortages, with the largest declines expected for the counties of Norrbotten, Gotland and Dalarna. There is an increasing necessity to mitigate the impact of demographic ageing and shrinkage of the working-age population by facilitating the entry of young people into employment and enabling older workers to remain involved in the labour market (King Baudouin Foundation and European Union 2012).

Therefore, there is a need to identify and implement programmes to re-position workers (older and younger) who are un-(or under) employed, especially less-skilled workers, in a concerted effort to encourage their participation and integration into the workplace (job carving)<sup>6</sup> and to connect older and younger workers in the workplace. Incentives for staying in work after age 60, as well as social security systems designed to promote working later in life, need to be developed, including creating new roles within companies for workers in their later life. Examples of strategies for activation and integration are highlighted in Appendix 6.

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<sup>6</sup>Job carving is a term for customising job duties, such as creating specialist job roles therefore freeing up time of specialist staff, or swapping job duties to make the most of individual skills.

Workplace participation and integration also refers to actions implemented in the workplace such as mentoring and companionship—two approaches that not only promote inter-generational skills development but also encourage professional relationships and remove the negative perceptions of older workers. Mentoring is the sharing of work-related know-how and the “. . . objective is for older workers and younger retirees to transmit their skills to younger workers. Through mentoring, an older worker introduces a younger worker to his/her social and professional environment, a valuable aid in many occupations where contacts and networking are essential. Mentoring is highly valued by older workers and recently retired workers because it allows them to make use of their professional skills and maintain contact with the work environment. In terms of companionship, retired craftsmen teach the young the skills of their trade and strive to pass on their skills, knowledge and passion for their job to future generations. Carpenters, cabinet-makers, masons, electricians, etc. who often acquired their trade on the job, seek to help young people, often those experiencing difficulties at school, to find their vocation” (King Baudouin Foundation and European Union 2012: 20–21).

### **11.3.3.3 Reforming Workforce Age Management: Workplace Perceptions and Designs**

The OLWOF Index for work culture and opportunities reveals poor results (below 3 out of 5) for all of the case study regions (see Sect. 11.2). Ageing societies are impacting on the composition of the workforce and, as highlighted in the dashboard results older persons, employment is of critical concern in Poland and unemployment of older persons is critical in differing regions in the Netherlands. CEDEFOP (2012) stresses the need to tackle the challenges associated with an ageing workforce and make use of new opportunities. The report states that actions from stakeholders on all levels are required, including enterprises. Reversing the negative stereotyping; encouraging investment in the ageing workforce, for example in workplace design and management concepts; or promoting lifelong learning for ageing workers, is not only needed, but is also essential for maintaining a sustainable labour force in the future. According to an OECD (2012a: 34) paper, a key priority of OECD countries is to encourage work at an older age, and should be a key policy agenda “. . .to pay particular attention to demand-side issues and appropriate measures to strengthen employability of older workers . . .more focus should be given to improving the demand for older workers and on facilitating greater labour mobility as a way of promoting employment at an older age”.

There is a need to focus attention on the removal of mental barriers and negative perceptions of age and ageing workers through information campaigns. For example the results in Chap. 10 show that older age groups can have a positive effect on labour productivity in a firm, due to the so-called Horndal effect where the accumulated work-experience and firm specific knowledge of older workers compensates for possible negative ageing effects such as lower flexibility and willingness and ability to learn new things. At the same time, local campaigns are needed

to identify and encourage enterprises (public and private) to assume responsibility for implementing age-sensitive workplace design, management and leadership (CEDEFOP 2012). It is important to raise awareness of the benefits and challenges of active ageing to employers and encourage them to invest in their staff and stimulate age-friendly HR policies; organise initiatives to eradicate the negative perceptions of age; encourage guidance and counselling services that incorporate a life-cycle perspective that promotes employability and that is adapted to the needs and abilities of the ageing population. Box 11.3 highlights an age management policy in a UK gas supplier.

**Box 11.3 Centrica: Age Management Policy (United Kingdom)**

Centrica, a large-scale UK gas supplier, is attempting to encourage age diversity among its labour force by setting up various measures such as the Age Action Group, which brings together the managers of various sections to see how they, as a group, can best meet the needs of their ageing workforce. With this in mind, they have developed an awareness-raising programme on age management with flexible working conditions, a network of staff members with family obligations, teams of different ages and potential for mentoring. They feel that the age mix helps staff members in these groups to be mutually enriched.

*Source:* Community Programme for Employment and Social Solidarity (PROGRESS) of the European Union, “Toward an Age-Friendly EU” website. Available at: [www.age-platform.eu/en/age-policy-work/solidarity-between-generations/best-practices/985-employment](http://www.age-platform.eu/en/age-policy-work/solidarity-between-generations/best-practices/985-employment), access March 2013.

### ***11.3.4 Guidelines 4: Creating Dynamic and Responsive Labour Markets That Address Demographic and Economic Transitions***

Countries, regions and local labour markets are continually faced with both demographic (population change and ageing) and economic (financial crisis) transitions, as highlighted by the dashboard, which impact on youth, elderly and economic dependency ratios. As argued by McCann in Chap. 2, the interrelationships between migration, ageing and the accumulation or depletion of local human capital flows are far more complex at the local and regional level, because of the much more differential impacts on shorter distances of migration and commuting. Therefore, cities and regions need to be analysed and compared in more detail and require an integrated place based response. Central governments are no longer the sole provider of territorial policies. Shrinking areas require a coherent policy response from national and local governments to maintain existing jobs, generate new

employment and protect vulnerable households. National, regional and local levels of government need to align their various strategies in order to develop a consistent direction to meet development objectives, leverage economies of scale, and reap the dividends of joint initiatives that share knowledge and reduce operational overheads.

There are three key policy actions to foster dynamic and responsive labour markets during demographic and economic transitions:

1. creating policy dialogue: regional facilitation and networking
2. developing new local workforce ecologies: entrepreneurship, SME and workforce flexibility
3. embracing new sources of growth: opportunities and innovation in labour markets.

#### **11.3.4.1 Creating Policy Dialogue: Regional Facilitation and Networking**

Improving the policy coherence between national and local levels of government (vertically) and co-ordination across different ministries (horizontally) can significantly increase the effectiveness of programme delivery and the quality of services provided. According to McCann in Chap. 2 the different regional demographic trajectories imply very different long run fiscal futures for regions and cities and these differences pose real challenges for devolution agendas. At the same time, the demographic challenges also lead to opportunities for urban redesign approaches, centering on the compact city and smart city programs. The interests of the national and local governments may not always be in harmony. National considerations, such as increased gross domestic product or improved foreign exchange flows, may not always mesh with local government's concerns, such as local job creation, infrastructure development and social protection programmes. National and local governments need to harmonise (Box 11.4) development objectives (e.g. enhanced rural access) to avoid redundant programmes and heighten the effectiveness of programmes occupying shared geographic and technical space (e.g. environment). At the same time, identification of conflicting national-local objectives (e.g. the planning of rural roads for extractive industries rather than for improving market access for remote rural producers) can result in a national-local dialogue that can lead to the development of an innovative win-win situation (OECD and International Labour Office 2011).

### **Box 11.4 Opportunities and Challenges for Effective Harmonisation of National-Local Strategies**

There are significant *opportunities* for local strategies to play a deciding factor in the success of national social and economic programmes. The core advantages of including a local dimension into a national strategy are manifold. Key gains are:

- greater flexibility to changing local opportunities and challenges
- improved utilisation of scarce resources through better targeting
- greater support for longer term, national strategic plans through leveraging quick wins.
- The harmonisation of national-local strategies and inter-ministerial co-operation can yield significant efficiency dividends. A successful alignment and division of roles hinges, naturally, on the effective degree of decentralisation. Several *challenges* may impede government synchronisation and policy alignment:
  - local government priorities do not coincide with national priorities
  - lack of experienced local managers or technical experts to address new local mandates
  - limited local financial space that restricts local governments' ability to mobilise resources for their initiatives.

*Source:* OECD and International Labour Office (2011), *Job-rich Growth in Asia: Strategies for Local Employment, Skills Development and Social Protection*, Local Economic and Employment Development (LEED), OECD Publishing. DOI: [10.1787/9789264110984-en](https://doi.org/10.1787/9789264110984-en)

Encouraging horizontal integration and vertical alignment of policies is required for dynamic and responsive labour markets. This alignment can be achieved by promoting co-operative frameworks and regional co-ordinated approaches, such as territorial employment pacts (Appendix 7), an innovative approach to initiate networks that provides an institutional framework and commitment for regional and local targeted employment strategies. Regional employment pacts should be established to complement local approaches, providing a simple and effective mode of governance whereby stakeholders communicate and co-operate as equal partners, thus encouraging local empowerment. The implementation of local employment programmes can activate hidden reserves of the labour market or make the place more attractive to live for more productive higher educated and thus reduce the effect of the shrinking workforce due to ageing.

However, it is not only about governmental and private sector dialogue; there is a need to incorporate citizens' participation and involve leading local stakeholders in the preparation of the local policy, thereby increasing the awareness of demographic change within the local community to assist in the adoption of more realistic provisions/measures, especially in relation to regeneration strategies for local

areas. Governance needs to be strengthened by establishing rich communication, networking or partnerships to encourage leadership; involvement by all stakeholders (public, private and community sectors); and provision of funds/resources.

#### **11.3.4.2 Developing New Local Workforce Ecologies: Entrepreneurship, SMEs and Workforce Flexibility**

Within an ageing society, there will be opportunities for the older population to become more involved in the local labour markets. According to the European Union and OECD (2012), “few older people are involved in entrepreneurship, particularly women, and their enterprises tend to be less growth oriented than firms of younger entrepreneurs. [However] . . . there is a growing population of healthy older people with the skills, financial resources and time available to contribute to economic activity through extending their working lives, including through entrepreneurship”. According to a 2009 Eurobarometer Survey on entrepreneurship, 68.2% of prime aged (20–49 years) persons never thought about starting a business, while this figure jumped to 86.2% of older persons (50–64 years). While 14.6% of prime aged persons were thinking about starting a business, this dropped significantly to only 3.6% of older persons. The percent of people involved in early start-up activities is 17.3% for prime aged persons and 10.3% for older persons. Therefore, “. . . the older an individual gets, the less likely they are to take action on their entrepreneurial intention because they have less time left to enjoy the benefits that the business generates. This suggests that the bulk of those seriously considering starting a business has already taken action and that policy should focus on increasing interest and awareness about entrepreneurship in the third-age before people get there” (European Union and OECD 2012, p. 8). Delfmann et al. (2014) has investigated the impact of population change on new firm formation. The results show that the relationship between new firm formation and population change depends heavily on the regional context. The results indicate that new firm formation in urban regions tends to be negatively influenced by population change, while the impact in rural regions remains positive. In conclusion, clear differences are found in the intensity of the impact of population change on new firm formation according to the type of region. Therefore, the regional context and the intensity of decline must be taken into account when determining the kind of coping mechanism needed to deal with the consequences of decline.

As a result, there is a need to promote entrepreneurship and workplace flexibility by designing strategies for new work ecologies incubators, entrepreneurship education, skills development in SMEs and the development of senior entrepreneurs. Examples of these type of policies can be found in Appendix 8. Local development needs to focus on attracting youth and encouraging entrepreneurs to settle within declining areas through a systematic process of incentives and networking strategies aimed at reducing unemployment and more active implementation of revitalisation programmes.

### **11.3.4.3 Embracing New Sources of Growth: Opportunities and Innovation in Labour Markets**

Demographic transitions can also provide opportunities in the “silver economy” (the ecosystem of services for the older customer). For example, in China during the 2006–2010 Plan period, the number of community service centres nationwide reached 175,000 and that of urban convenience outlets 693,000. Nearly half of the urban communities and 80% of towns and villages launched aged service facilities. There are 38,060 nursing homes nationwide, providing a total of 2.662 million beds for 2.109 million elderly people. China has issued a series of policies to promote the development of national nursing homes, including “Recommendations on Accelerating Socialisation of Social Welfare”, “Recommendations on Accelerating the Development of Old-Age Services”, “Assessment Standards on State-Level Nursing Homes”, and “Code of Conduct for Social Welfare Institutions”. The professional and standard development of elderly care services has been further advanced by the efforts of full-time social workers and volunteers (see Chap. 5).

The growing demand for labour-intensive personal services is not able to be managed at the national level by increasing the supply of adequate labour. This applies even more forcefully to regional markets: the relatively large increases in personal and health services in declining and ageing regions have to be met by adjustments in the local and regional labour market. Promoting workforce mobility, flexibility and cross-border collaboration will help support local businesses and economies and will stimulate key economic sectors and encourage entrepreneurship and business opportunities. Maintaining employment is critical to regeneration strategies, therefore it is essential to examine opportunities to strengthen and stimulate economic activity in the region, creating conditions for business opportunities supported by regional and municipal authorities that focus on emerging activities, especially in high-tech and knowledge-based activities.

Declining areas require local action, such as business/industry clusters, marketing, skills and employment programmes, and a focus on new growth areas such as the green and silver economies, to boost the local economy. Places have value and social capital as well as a “right to survive” and investment in lifestyle infrastructure can contribute to increasing their resilience.

### **11.3.5 Guideline 5: Generating Innovative Skills Ecosystems: Skills Capital for Local Communities**

The importance of education and skills and training development services within the regions cannot be under-estimated, which is highlighted by the fact that the OECD has developed a Skills Strategy *Better Skills, Better Jobs, Better Lives: A Strategic Approach to Skills Policies* (OECD 2012b) introducing three policy



levers: (i) developing relevant skills: encourage and enable people to learn throughout their lives, enable skilled people to enter their territory, and establish cross-border skills policies; (ii) activating skill supply: encourage inactive people to participate in the labour market and retain skilled people (discourage early retirement and staunch brain drain); (iii) putting skills to effective use: assist individuals to make the best use of their skills and increase the demand for (high-level) skills.

In activating the skill supply it is important to target specific groups. The European Commission's (2012) report highlighted: youth, older workers and migrants. Continued development and improvement in education and skills and training development services, is required to ensure a quality market supply of labour, and the longevity of a professionally active population. Local skills ecosystems (Box 11.5) are imperative for increasing the human resource skills capital of regional and local communities.

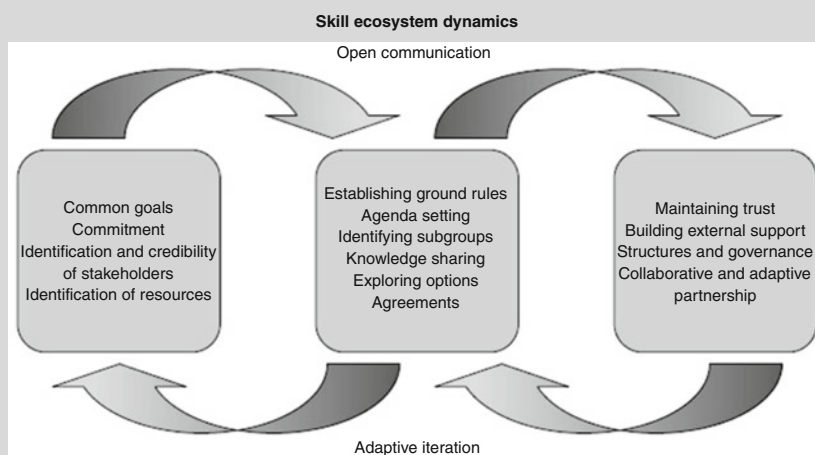
### **Box 11.5 Skills Ecosystems**

Important elements in the skill ecosystem are the establishment and cultivation of *regionally based networks and partnerships* organised around the principle of workforce development. According to Hall and Lansbury (2006), there is merit in encouraging the development of regional and industry specific networks, which bring together public and private training providers (colleges, universities, other training providers), employers, industry representatives, unions, labour market and training intermediaries (temporary work agencies and group training companies), local and regional government agencies and community representatives. As Hall and Lansbury (2006)<sup>7</sup> state, *the government plays a critical role in acting as a catalyst providing an appropriate policy context and support* in terms of resources infrastructure and an institutional framework for the establishment and operation of the networks. Smith et al. (2006)<sup>8</sup> illustrates the skill ecosystem dynamics of open communication and adaptive iteration below.

(continued)

<sup>7</sup>Hall, D. and R.D. Lansbury (2006), "Skills in Australia: Towards Workforce Development and Sustainable Skill Ecosystems" *Journal of Industrial Relations*, Vol. 48, No. 5, pp. 575–592.

<sup>8</sup>Smith, SmithComyn & Associates for TAFE NSW ICVET, (2006) 'What makes a successful skill ecosystem?', *eZine*, [http://lrrpublic.cli.det.nsw.edu.au/lrrSecure/Sites/Web/13289/ezine/year\\_2006/feb\\_apr/feature\\_ecosystem.htm](http://lrrpublic.cli.det.nsw.edu.au/lrrSecure/Sites/Web/13289/ezine/year_2006/feb_apr/feature_ecosystem.htm)

**Box 11.5** (continued)

Source: Smith (2006).

Source: OECD (2013b), *Skills Development and Training in SMEs*, Local Economic and Employment Development (LEED), OECD Publishing, Paris, <http://dx.doi.org/10.1787/9789264169425-en>, p. 99

There are two key policy actions to create innovative skills ecosystems for the development of skill capital for local communities:

1. creating a lifelong learning culture: youth, adult and elderly skills development
2. connecting education/skills institutions with local labour markets: skills capital and innovation for local communities.

### 11.3.5.1 Creating a Lifelong Learning Culture: Youth, Adult and Elderly Skills Development

The dashboard's skills and education component (see Sect. 11.1) revealed concerns in both tertiary attainment and adult participation in education, specifically in Poland, where in 2010 performance for both indicators ranged from very poor to critical and in the Netherlands' case study regions there was not any significant improvement between 2000 and 2010. It is the investment (of both time and money) in adult education and training that is essential for meeting the changing labour force skills demands, therefore the local communities need to be able to adapt (OECD 2012c). "Lifelong learning has been a defining goal for education

and training policies for many years, emphasising the need for organised learning to take place over the whole lifespan and across the different main spheres that make up our lives (“life-wide”)<sup>9</sup> (OECD 2012d: 72). Fostering lifelong learning will stimulate competitiveness because economies now depend on value that is added from the entire workforce. Examples of these type of policies can be found in Appendix 9). Regional firms need to invest in and improve their learning culture, with flexible and tailor-made training and skills development programmes, not only for new employees, but also for the older workforce. To increase entrepreneurship or self-employment, educational programmes and business coaching should be promoted wherein the skills of older people are transformed into new opportunities.

### **11.3.5.2 Connecting Education/Skills Institutions with Local Labour Markets: Skills Capital and Innovation for Local Communities**

Regional labour markets require a skilled workforce. A decrease in the potential labour force does not automatically result in lower unemployment, but may also lead to a greater mismatch between labour supply and demand. Labour shortages for any particular sector are not only the result of demographic changes but also the educational and career choices made by young people. Education should be aimed at encouraging student participation and linkages within the regional economy. There is a need to stimulate businesses and knowledge institutes to develop joint educational programmes, so that the competencies of the available labour force better match current and future labour requirements. Development of widely available, valid and reliable information and career counselling to guide occupational choices is also needed, such as the Entrepreneurship Summer School.<sup>9</sup> To enable this free flow of information, there is a need for better co-operation between employers, educational institutes, trade unions and local authorities. Universities should adjust their learning programmes to meet the regional needs of the economy, increase international student attendance and encourage a family-friendly environment. Sweden’s Pajala and Kiruna municipalities collaborate on planning education that is strategically important to business development and to municipal obligations, in order to be able to meet the demand for labour. They operate training programmes in collaboration with other municipalities in the north of Sweden, primarily programmes at academic levels. Collaboration between the municipalities makes it easier to achieve the requisite educational outcomes and facilitates recruitment of suitable education co-ordinators in the education system.

Franklin explores in Chap. 9 the extent to which declining cities in the United States—those experiencing shrinking populations—are also associated with a decline in stocks of human capital. It turns out that for US cities, population change statistics mask underlying shifts in population composition in terms of changes in

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<sup>9</sup>[www.london.edu/programmes/executiveeducation/entrepreneurshipsummerschool.html](http://www.london.edu/programmes/executiveeducation/entrepreneurshipsummerschool.html)

the stock of human capital and that may, in many ways, be more important to a city's wellbeing than total numerical changes in the number of people. Borrowing the concept of "smart shrinkage" from the planning literature, this chapter argues that one potential policy measures of "smart" decline could be the renewed or persistent attraction of these locations for the college educated.

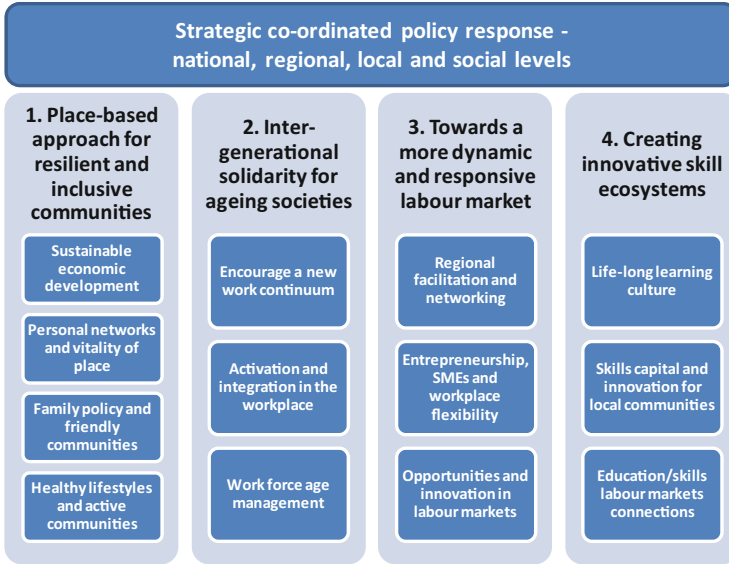
In Trento (Italy), the AWARE (Ageing Workers Awareness to Recuperate Employability) Project, developed within the ESF framework between 2004 and 2007, aimed "to increase the employability and career prospects of the ageing population (those over 45 years of age), increasing their access to and participation in opportunities for learning and training, as well as increasing the awareness of their competences" (AWARE 2007: 102). In order to achieve this goal, the project promoted the creation of partnerships, including universities, research centres, employment centres and two municipalities, among which the promotional role was played by the Department of Social Affairs and Employment—European Social Fund Office of the Autonomous Province of Trento.

There is need for a sustained approach to promote targeted and better connections between education and skills development and regional labour markets (local skills ecosystem) for job preparation and creation and re-orient Vocational Education and Training organisations to new skills ecologies. Examples of these type of policies can be found in Appendix 10.

## 11.4 Summary of Policy Responses

The issues involved require converging strategies across policy fields and knowledge disciplines, as can be seen in Fig. 11.5. Overall there is a need for a holistic development approach that integrates economic growth, health, education, environment and other needs can produce higher quality outputs than stand-alone projects operating on a narrow spectrum of deliverables. Strategic solutions must take into account the interplay of elements within a particular local area of development and encompass both local and regional capacity to attract and generate jobs within the national and economic context. To develop demographic transitional strategies, the quality of local population forecasting as well in numbers as in terms of the stock of human capital has to be improved. A common legal framework for small-scale surveys; a set of indicators for demographic change, which is simple to use and update; and co-ordination and co-operation to ensure consistency and synergy of data are needed. This would allow the development of a local urban and regional place based perspective in planning policies and decision-making processes resulting in 'smart shrinkage' policies.

As countries come to grasp with the challenges of demographic change, issues of gender and income security, labour productivity and the change of location of the human capital stock due to migration, become more evident as well as the decisive role of cultural responses in the implementation of strategies and how successful they are. The Korean and Japanese cases show how different realities and responses



**Fig. 11.5** Converging strategies across policy fields. *Source:* Author

can be from other OECD countries in the ‘North’. For this, the ‘process’ of designing policy responses in an inclusive way across government departments and government levels remain one of the most critical national challenges of the demographic transition.

## Appendices

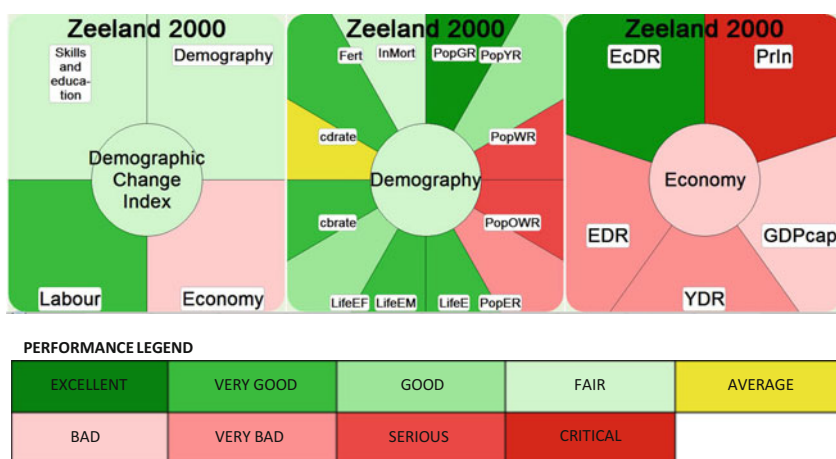
### *Appendix 1 Demographic Change Dashboard*

The Dashboard tool was developed by the Consultative Group of Sustainable Development Indices (CGSDI) in an attempt to help and launch the process of putting indicators at the service of democracy. The website was a free, non-commercial software, providing the opportunity to download the “Dashboard Development Kit” which has an Excel template allowing personal dashboards to be set up.

The Dashboard present sets of indicators in a simple pie chart based on three principles:

- the size of a segment reflects the relative importance of the issue described by the indicator
- colour codes signal relative performance, with green meaning “good” and red meaning “poor”
- a central circle, the Policy Performance Index (PPI), summarises the information of the component indicators.

The Demographic Change Dashboard is an evolving tool to assess the performance levels of demographic transition at a regional scale. The Netherlands’ dashboard provides a comparison “with and between” the Netherlands and the case study regions—Groningen, Drenthe, Limburg and Zeeland (example below) (green indicates the region’s performance is better [good], red indicates that its performance is lagging or lower [poor] than the comparison regions).



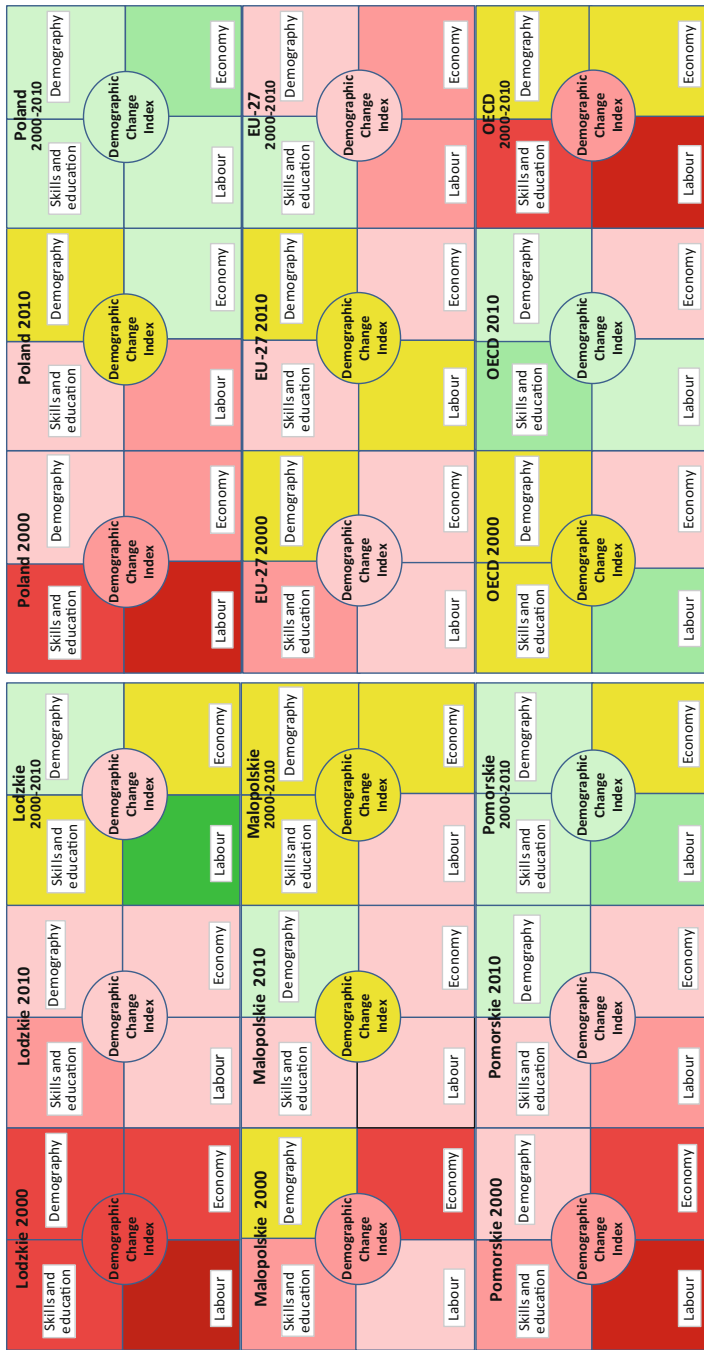
Source: OECD calculations based on OECDStats (<http://stats.oecd.org/Index.aspx>), Eurostat ([http://epp.eurostat.ec.europa.eu/portal/page/portal/statistics/search\\_database](http://epp.eurostat.ec.europa.eu/portal/page/portal/statistics/search_database)) and Central Statistical Office of Poland (<http://stat.gov.pl/en/>)

2000–10—current indicators included	
Theme: Demography	Codes
Population growth (%)	PopGR
Population 0–14 years old (%) of the total population	PopYR
Population 15–64 years old (%) of the total population	PopWR
Population 55–64 years old (%) of the total population	PopOWR
Population 65+ years old (%) of the total population	PopER
Life expectancy (years)	LifeE
Life expectancy—Male (years)	LifeEM

(continued)

2000–10—current indicators included	
Life expectancy—Female (years)	LifeEF
Crude birth rates (number of births per 1000 per year)	Cbrate
Crude death rate (number of deaths per 1000 per year)	Cdrate
Fertility rate	Fert
Infant mortality rates (death per 1000 births)	InMort
Theme: Economy	Codes
Primary income (millions of national currency, current prices)	PrIn
Regional GDP (USD current PPP, current prices)	GDP
Regional GDP per capita (current prices, millions of national currency)	GDPcap
Youth dependency	YDR
Elderly dependency	EDR
Economic dependency	EcDR
Theme: Labour	
Employment rate (%) (15–64 years old)	EmpR
Employment rate—Young adults (15–24 years old) (%)	EmpYR
Employment rate—Older workers (55–64 years old) (%)	EmpOR
Unemployment rate (%)	UEmpR
Unemployment rate—Young adults (15–24 years old) (%)	UEmpYR
Unemployment rate—Older workers (55–64 years old) (%)	UEmpOR
Theme: Skills and education	
Students enrolled in education (% of total population)	STenED
Students enrolled in tertiary education (% of total students enrolled)	STenTED
Tertiary education attainment (% total employment)	TerEdAtEm
Tertiary education attainment (% of labour force)	TerEdLF
Participation of adults in education (%)	PaAdEd
Participation of adults in education—Males (%)	PaAdEdM
Participation of adults in education—Females (%)	PaAdEdF
LIST:	Dashboard name
EU27	EU27
OECD total/average	OECD

*Appendix 2 Poland's Demographic Change Dashboard and Focal Indicators*



Source: OECD (2014), *Fostering Resilient Economies: Demographic Transition in Local Labour Markets*, available at: [http://www.oecd.org/cfe/leed/Fostering-Resilient-Economies\\_final\\_opt.pdf](http://www.oecd.org/cfe/leed/Fostering-Resilient-Economies_final_opt.pdf); Calculations based on OECD StatsExtract. Available at: <http://stats.oecd.org/Index.aspx>, accessed June 2012; Eurostat. Available at: [http://epp.eurostat.ec.europa.eu/portal/page/portal/statistics/search\\_database](http://epp.eurostat.ec.europa.eu/portal/page/portal/statistics/search_database), accessed June 2012; and Central Statistical Office of Poland. Available at: <http://stat.gov.pl/en/>, accessed June 2012



Focal indicators (2000–10) for the case study regions in Poland

	Demography	Economy	Labour	Skills and education
Łódzkie	Youth population; elderly population; life expectancy (males); crude death rate	Primary income per household; GDP per capita	Employment of older workers	Students enrolled in education; participation of adults in education
Małopolska	Youth population; elderly population; life expectancy (males); crude death rate; fertility rate	Primary income per household; GDP per capita	Employment (overall, young adults and older workers)	Students enrolled in education; participation of adults in education
Pomorskie	Youth population; elderly population; life expectancy (males); crude death rate	Primary income per household; GDP per capita	Employment of older workers	Students enrolled in education; participation of female adults in education

Source: OECD (2014), *Fostering Resilient Economies: Demographic Transition in Local Labour Markets*, available at: [http://www.oecd.org/cfe/leed/Fostering-Resilient-Economies\\_final\\_opt.pdf](http://www.oecd.org/cfe/leed/Fostering-Resilient-Economies_final_opt.pdf)

### ***Appendix 3 Family Policies Initiatives***

At the national level: One of the objectives of the Long-Term Care Insurance Act 1998 in Luxembourg is to acknowledge the role of informal carers and provide them with support. Specific measures in support of family carers encompass advisory services, payment of pension insurance contributions for those below 65, respite care and support for the adaptation of the house and technical aids. It has enabled a massive development of home-based care and help services, and family advice and support services.

At the local level: The Substitute Grandparent Scheme in Denmark. A number of Danish municipalities have implemented a scheme enabling senior volunteers, acting as substitute grandparents, to take care of ill children when parents do not have the opportunity to take time off from work (European Platform for Investing in Children<sup>1</sup>). It aims both at relieving families and helping them with childcare in connection with illness, and at promoting active ageing and inter-generational solidarity. Similar initiatives are implemented by local NGOs in other regions of the European Union.

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*Notes:*

1. European Commission. “European Platform for Investing in Children”. [http://ec.europa.eu/employment\\_social/emplweb/families/index.cfm?id=7&langId=en&newsId=18&d\\_t=yes](http://ec.europa.eu/employment_social/emplweb/families/index.cfm?id=7&langId=en&newsId=18&d_t=yes). Accessed June 2013.

*Source:* King Baudouin Foundation & European Union (2010) “Intergenerational Solidarity the Way Forward” Available at: [www.age-platform.eu/images/stories/EN/CoverAGE/EN/21879\\_brochure\\_age\\_2010\\_en.pdf](http://www.age-platform.eu/images/stories/EN/CoverAGE/EN/21879_brochure_age_2010_en.pdf), accessed: June 2013.

## ***Appendix 4 Promoting Healthy and Active Lifestyles in Scotland and Australia***

### **Reshaping Care in Scotland**

The Reshaping Care for Older People is an initiative of the Scottish government aimed at improving services for older people by shifting focus towards anticipatory care and prevention. The “Reshaping Care for Older People: A Programme for Change 2011–2021” outlines the following key themes:

- partnerships in a community business model to keep people out of the formal care system
- helping people remain at home using telecare and home adaptation, supporting healthy ageing through diet, exercise and fall prevention
- creating effective care pathways including anticipatory care plans, managed care networks, re-enablement and implementation of dementia strategy.

### **Healthy and Active Australia**

The Australian government has a campaign committed to the promotion of healthy lifestyles, addressing obesity and taking preventative measures to improve the health of the community with a number of initiatives including:

- Get Set 4 Life: a guide providing information on key areas of health and development.
- Stephanie Alexander Kitchen Garden National Program: primary schools learn how to grow, harvest, prepare and share fresh food.
- Learning from successful community obesity initiatives: bringing together the lessons learnt from community projects aimed at preventing obesity.

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- Aged Care: a website with information on elderly care, staying at home, elderly care homes, carers and family and health.
- Healthy Communities Initiative: a three-phase initiative from April 2010 to June 2014. The Australian government is issuing grants to local governments to deliver effective community-based physical activity and healthy eating programmes and to develop local policies that support healthy lifestyle behaviours.
- Healthy Weight: a website providing information on physical activity and nutrition to achieve and maintain a healthy weight.
- Active After-School Communities (AASC) Programme: provides primary school children with a fun, free and safe introduction to over 70 sports and 20 other structured physical activities and encourages lifelong participation in sport.
- MyHospitals website: online vehicle for the National Health Performance Authority to report on the performance of individual hospitals and local hospital networks, enabling patients to compare the services available at, and the performance of, different hospitals in their local area.
- Healthy Spaces and Places project: a partnership between the Australian Local Government Association, the National Heart Foundation of Australia and the Planning Institute of Australia in the development of the Healthy Spaces and Places Planning Guide.

*Sources:* OECD (2011) Health Reform: Meeting the Challenge of Ageing and Multiple Morbidities, OECD Publishing. <http://dx.doi.org/10.1787/9789264122314-en>;

COSLA, The Scottish Government and NHS Scotland (2011), Reshaping Care for Older People: A programme for change 2011–2021, [www.scotland.gov.uk/Resource/0039/00398295.pdf](http://www.scotland.gov.uk/Resource/0039/00398295.pdf) and

Australian Government, Department of Health, “A Healthy and Active Australia” website. Available at: [www.healthyactive.gov.au/internet/healthyactive/publishing.nsf/Content/home](http://www.healthyactive.gov.au/internet/healthyactive/publishing.nsf/Content/home). Accessed June 2013.

## *Appendix 5 Facilitating Work After Retirement*

**Governments** can play a role by shaping labour markets, developing equal opportunity and social protection policies as well as tax and benefit systems. For example, in Sweden, employers are exempt from payroll taxes for all

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employees over the age of 65. A pilot scheme in Italy offered workers who were about to retire the possibility to postpone retirement by 3 years, and add employer and employee social security contributions to their income.

**Companies** can also play a role, with measures aimed at attracting and retaining pensioners. Examples include the Ship Design and Research Centre in Poland, where 7% of its employees are retirees. Most of these people work in areas in which they have expertise that the company does not want to lose. As pensions in Poland can be low in comparison to the increasing cost of living, work has become a necessity for many, even for the relatively well-off. A recent national law, however, requires pensioners to resign and re-apply for their jobs to continue receiving a pension in addition to their working income. For some, this might mean the end of their employment.

Some companies also specifically **recruit older workers**. One example is Seniorjobbarna in Sweden, which conducts agency work in areas such as crafts, cleaning and gardening. Another is the Austrian Senior Expert Pool, which provides consultancy services, mainly in management or highly specialised technical areas. In both cases, the option of working part-time and with flexible working hours was considered crucial in attracting and retaining retirees.

**The Senior Enterprise project<sup>1</sup>** is an EU initiative from the ‘European Year for Active Ageing and Solidarity between Generations 2012. The project aims to raise awareness about how people over 50 can engage with enterprise and the benefits that can flow from that engagement. This could be through starting a business, alone or with others; acquiring or investing in a business; advising an entrepreneur; or supporting innovation within a business owned by another.

The four-year project (2010–14) is being implemented in Ireland, the UK and France and nine observers across north-western Europe. The change in demographics is viewed in an almost entirely negative light by many people, but the promoters (The Mid East Regional Authority, Ireland) of Senior Enterprise believe that the over 50 age group is a source of untapped potential that could be used to drive forward Europe’s national economies.

It is intended that, as a result of Senior Enterprise, more businesses will have been started, more investment will have been made and more senior citizens will be active as advisors in new and developing businesses. The project is being implemented by **partners** in France, Ireland, and the United Kingdom, and nine observers across north-western Europe.

**PATRON Project (Spain)<sup>2</sup>** a Grundtvig<sup>3</sup> project identifies and tests ways to transfer skills that senior managers and entrepreneurs have developed in their working lives which have helped them to develop their creativity, competitiveness, management and entrepreneurial capacities. Young entrepreneurs and managers benefit from this skills transfer in the participating countries

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and regions. The methods and results are disseminated through the project's website, and can be used in other participating regions. For more details, see: [www.patronproject.org](http://www.patronproject.org).

*Notes:*

1. <http://europa.eu/ey2012/ey2012main.jsp?catId=975&langId=en&mode=initDetail&initiativeId=785&initLangId=en>
2. See [www.age-platform.eu/en/age-policy-work/solidarity-between-generations/best-practices/985-employment](http://www.age-platform.eu/en/age-policy-work/solidarity-between-generations/best-practices/985-employment)
3. Launched in by the EU in 2000 and now part of the overarching Lifelong Learning Programme, Grundtvig programme aims to provide adults with ways to improve their knowledge and skills, keeping them mentally fit and potentially more employable. The programme has three actions including Multilateral projects, multilateral networks and accompanying measure. [http://eacea.ec.europa.eu/llp/grundtvig/grundtvig\\_en.php](http://eacea.ec.europa.eu/llp/grundtvig/grundtvig_en.php)

*Sources:* European Commission, "European Year for Active Ageing and Solidarity between Generations" website, Available at: <http://europa.eu/ey2012/ey2012main.jsp?catId=975&langId=en&mode=initDetail&initiativeId=785&initLangId=en>, access March 2013;

European Foundation for the Improvement of Living and Working Conditions (2011), "Living longer, working better—Work after retirement", Eurofound, Dublin, [www.eurofound.europa.eu/pubdocs/2011/663/en/1/EF11663EN.pdf](http://www.eurofound.europa.eu/pubdocs/2011/663/en/1/EF11663EN.pdf) accessed March 2013; and

Community Programme for Employment and Social Solidarity (PROGRESS) of the European Union, "Toward an Age-Friendly EU" website, Available at: [www.age-platform.eu/en/age-policy-work/solidarity-between-generations/best-practices/985-employment](http://www.age-platform.eu/en/age-policy-work/solidarity-between-generations/best-practices/985-employment), access March 2013.

## ***Appendix 6 Examples of Strategies for Participation and Integration into the Workplace Older Workers***

In Germany, Perspective 50 Plus—Employment Pacts for Older Workers in the Regions, is part of the Initiative 50 Plus programme under the German Federal Ministry of Labour and Social Affairs. A programme of regional employment pacts was launched to initiate and evaluate new strategies targeting older workers. Those supported are predominantly among the low- or semi-skilled long-term unemployed. Job centres and local authorities

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find the activation and integration of older workers particularly difficult and these regional employment pacts aim to involve all appropriate regional and local stakeholders to ensure more and better employment for this group. This form of regional co-operation takes a cross-sector approach including: the labour market; employment; social and health policies. Regional pacts have deployed a wide range of different tools and instruments, including profiling, assessments, special training measures, internships in companies, placement activities (adapted to the special needs of the target group), wage subsidies for employers, time management and publicity campaigns to raise awareness of the challenges of demographic change.

### **Job Carving**

Canada's WORKink® is an online career development and employment portal for persons with disabilities. However, it can be applied to persons who are unemployed or less skilled. The portal describes the values of "job carving" (or creating roles), thus "structuring one or more jobs to make the best use of all employees' skills and abilities". To implement successful job carving practices it is important to consider:

- Changes in supervision requirements, such as more frequent instructions and guidance.
- Alternative methods of conveying job instructions and adding new tasks.
- Co-worker involvement and support.
- Involvement of a community agency that works with employers to define roles, assist in training employees and ironing out some of the initial details.
- Job or work experience with defined time parameters.
- Staying positive. Being prepared to deal with some co-workers' negative perceptions about "make work" projects and short-term limited opportunities.

*Sources:* Forum Partnerships, "Germany: Perspective 50 Plus—Employment Pacts for Older Workers in the Regions" Available at: [www.forumpartnerships.zsi.at/attach/germany2.pdf](http://www.forumpartnerships.zsi.at/attach/germany2.pdf). Accessed June 2013; and Government of Alberta, Human Resources and Employment, "Workink" Available at: [www.workink.com/articles.php?prID=2&pgID=8&art=1191](http://www.workink.com/articles.php?prID=2&pgID=8&art=1191) accessed June 2013.

## ***Appendix 7 Territorial Employment Pacts***

Employment pacts were initiated in 1997 by the European Commission, with a call for submission of projects under a “territorial employment pacts” initiative to improve the employment situation. The local pacts for employment are formed as multi-level partnerships between entities of key significance for local labour markets. Local governments can play a leadership role in elaborating strategies for active intervention on the local labour market together with local partners.

### **Territorial Employment Pact in Vienna**

The Employment Pact in Vienna began its formal co-operation in 1999 and is a partnership between the municipality of Vienna, the Public Employment Service, the *Wiener ArbeitnehmerInnen Förderungsfonds* (Vienna Fund for the Promotion of Employees—WAFF), the Federal Social Welfare Office—Vienna Regional Office, interested representatives of employers and employees (working group of the federal province). The objective is to support economic development and the development of employment policies for Greater Vienna with forward-looking, concentrated labour market interventions. The core function of the pact is to co-ordinate co-operation and to harmonise the strategic and operative labour market and employment policies in Vienna. Its functions are facilitation of co-ordination, collaboration and co-decision making in order to improve employment. These activities are based on joint programme development and financial co-ordination of the three key partners: the Vienna Fund for the Promotion of Employees, the Public Employment Service and the Federal Social Welfare Office. The pact has two special focus areas: youth, who require support in the transition from school to training, and people at a risk of being permanently excluded from professional life. The labour market and employment policies are linked to other policy areas (social, economic, education). The pact has a transnational co-operation project with Bratislava (across the border in the Slovak Republic).

### **Barcelona Employment Pact**

The Barcelona Employment Pact is a partnership agreement between the City Council of Barcelona, Comissions Obreres (trade union) of Barcelonès, the UGT (trade union) of Catalonia, *Foment del Treball* (Department for the Promotion of Work), PIMEC (the organisation for promoting SMEs) and the government of Catalonia. The pact defines and agrees on the framework and priorities for developing active employment and local development policies in the capital of Catalonia. It constitutes a long history of social co-ordination in the city of Barcelona as manifested in previous agreements for employment of Barcelona, which were signed in 1997, 2001 and 2003.

The aim of the agreement is to promote a quality and inclusive labour market, with a high level of productivity; one that generates professional opportunities for everyone. The agreement is committed to the economic growth of the

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city of Barcelona that incorporates more added value and innovation and that allows the attainment of high levels of competitiveness, welfare and social and territorial cohesion. Effectiveness of the strategy relies on the commitment and inclusiveness of the partnership.

*Sources:* OECD (2011c). “More and better jobs: Employment pacts’ experience and business strategies”. OECD, Paris. [www.oecd.org/cfe/leed/48399478.pdf](http://www.oecd.org/cfe/leed/48399478.pdf). Accessed June 2013;

Martinez-Fernandez, M., P. Chorazy, T. Weyman and M. Gawron (2011), “The territorial dimension of the European Social Fund: A local approach for local jobs”, *OECD Local Economic and Employment Development (LEED) Working Papers*, No. 2011/23, OECD Publishing, Paris, <http://dx.doi.org/10.1787/5k9h5zbbdb41-en>.

## *Appendix 8 Senior Entrepreneurship*

Population and labour force ageing in Europe is impacting entrepreneurship. The promotion of entrepreneurship among seniors is a prospective policy option to prolong the working lives of older people, reduce older-age unemployment and enhance the social inclusion of older individuals. The policy focus should be on the factors that influence an older person’s decision to enter self-employment.

**Promote the benefits of entrepreneurship.** The Grundtvig project launched by the EU in 2000<sup>1</sup> supports several initiatives on active learning by adults, including “Superact”, which is a project funded by the European Regional Fund INTERREG and features personal stories about older entrepreneurs with disadvantaged backgrounds in order to promote entrepreneurship to other older entrepreneurs with non-mainstream backgrounds.<sup>1</sup>

**Improve entrepreneurship skills with training.** One example is the Business and Innovation Centre in the Slovak Republic. This private organisation serves older people and supports the creation of business start-ups with advice, education and start-up financing.<sup>2</sup>

**Develop and support networks.** The United States has had an entrepreneurship scheme for decades. Starting as the Service Corps of Retired Executives, now simply known as SCORE, the scheme was launched to provide business advice to former military officers. The scheme has grown and currently serves the wider population. Certain groups are targeted, such as people over 50, but the services are not tailored for different segments of the population.

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**Improve access to finance.** The Mature Entrepreneur project in Poland is another example. This scheme aims to support entrepreneurship among those over the age of 50 to help them remain in, or re-enter, the labour market through self-employment.

**Ensure there are no disincentives for entrepreneurship in social support systems.** Sweden has recently undertaken new policy actions to reduce sick leave contributions for all self-employed workers and guarantee them paid leave for seven days (European Commission 2010).

*Notes:* 1. More information is available at [http://eacea.ec.europa.eu/lfp/grundtvig/grundtvig\\_en.php](http://eacea.ec.europa.eu/lfp/grundtvig/grundtvig_en.php). 2. More information is available at: [www.europe-education-formation.fr/grundtvig.php](http://www.europe-education-formation.fr/grundtvig.php). 3. More information on the scheme is available at: [www.pup.gda.pl](http://www.pup.gda.pl).

*Source:* European Union and OECD (2012), *Policy Brief on Senior Entrepreneurship: Entrepreneurial Activities in Europe*, Publications Office of the European Union, Luxembourg.

## ***Appendix 9 Lifelong Learning as a Response to Demographic Change***

### **Genial: Generations at the Workplace (Austria)**

Demographic change will require enterprises to take more social responsibility and to access the resources of older employees to stay in the market; it will require employees to invest in their abilities, in their competencies and in their health. The Genial project of the provincial government supports these needs by assisting employees to develop their work-life balance in order to maintain their health, but also tries to elicit more individual responsibility for lifelong learning through to an advanced age, to stay open-minded about new technologies and to achieve a different attitude towards ageing.

Genial is based on three pillars:

- *public relations* and awareness raising
- *specific projects* realised in companies
- *network building* to exchange experiences and develop new measures and instruments to support the process.

The project also enables enterprises to better understand and deal with the human capital they can generate while enhancing the work experiences of older employees. The portfolio of activities is comprised of specific ageing

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analyses, work ability indices, specific support for putting concrete activities in place and more ([www.genial.or.at](http://www.genial.or.at)).

Within the framework of the project, the “Qualification Association Genial”<sup>1</sup> was founded, offering qualifications in health and work-ability issues, seminars for managers (e.g. on modern, more motivationally oriented leadership), and content-related issues. Currently, the Qualification Association Genial has 7 member companies and delivered 20 measures to approximately 230 people from March to July 2012.

### **Intelligent Personnel Management for Logistics (IPL)**

The pilot project IPL, funded by the Ministry of Labour, Social Integration and Welfare in North Rhine-Westphalia (Germany) and the European Social Fund, focuses on improving human resource management. Approaches to implementing lifelong learning as a component of demographically sensitive human resources work were generated from the results of the IPL project:

- Promoting vocational education and training:
  - additional training for people with immigrant backgrounds
  - part-time training
  - dual higher education study programmes in logistics.
- Further qualification of older workers in warehouse management and professional driving.
- Mixed-aged teams, designed to retain the knowledge and experience of older workers within companies, to foster inter-generational learning and to prevent the development of age-specific stigmas among employees.
- On-the-job training.
- Job rotation schemes and mixed work.
- Employee discussions on specific topics.

*Note:* 1. Qualification associations are instruments of active labour market policy whereby one or more large companies together with a number of smaller companies within a region engage in common qualification measures for their staff. Often companies within the same field and geographical area have the same needs regarding qualification, but it is too complicated and expensive for single organisations to go alone. Qualifications associations are supported by the AMS and the ESF, and receive higher funding if they offer measures for older workers.

*Source:* Förchner, M. (2012), “Partnership strategies for demographic change and ageing: Lessons learnt from a study visit to the Province of Carinthia, Austria, in October 2012”, OECD, Paris; and CEDEFOP (2012), *Working and Ageing: The Benefits of Investing in an Ageing Workforce*, Publications Office of the European Union, Luxembourg.

## ***Appendix 10 Connecting Education and the Local Labour Market***

### **OECD Skills Strategy: Good Practice in Designing Local Skills Strategies**

OECD analysis shows that the most effective local skills strategies integrate human resource and training policies into wider economic development strategies, so that the focus is not only on how skills can be developed, but on how they can be deployed. Designing such an approach means looking beyond immediate skills shortages and understanding how investment in human resources can help capitalise on local comparative advantage and local employment sectors, and capture new opportunities from global and national trends. It also means looking at how the public sector can help support existing skills “ecosystems”, self-sustaining concentrations of workforce skills and knowledge in an industry or a region, through publicly funded training and knowledge transfer. Such strategies involve not only education and training institutions but a wider range of stakeholders, including firms, employer associations, economic development agencies, employment agencies, trade unions and non-profit organisations that can work together to develop skills and training ecosystems (OECD 2013b). Competent brokers or facilitators who are capable of working across the private and public sectors are also of key importance

#### **North Rhine-Westphalia, Germany**

In North Rhine-Westphalia (Germany), support is provided for education and training aimed at enhancing human capital, which is seen as being fundamental to broad-based development, particularly in the context of demographic decline and workforce ageing. North Rhine-Westphalia’s sub-regions are developing plans aimed at providing broad support for education and training that extend from pre-school to university. The “Gemeinschaftsaufgabe zur Verbesserung der regionalen Wirtschaftsstruktur” (GA) (Joint task for the Improvement of Regional Economic Structure) is used to fund technical equipment in vocational training schools and training institutes. Land ministries are working together to co-ordinate or reorient existing funding streams towards common goals.

#### **Zorgacademie Limburg**

The Zorgacademie Limburg is a collaborative effort of schools, employers and municipalities in the province of Limburg. The three parties, supported by the province of Limburg, recognise that only through collaboration can a better quality of schooling and improved qualifications of workers in the care sector be achieved. It provides better schooling for starters, but also training for workers, as well as re-introductory courses for former workers and people

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switching jobs within the sector. It also supports a vacancy database for jobseekers. The initiative has been quite successful in matching demand and supply in the province. It won the prize for best practice in the DART (Declining Ageing and Regional Transformation) project, an initiative of European declining regions. The idea is applicable in other regions and sectors as well.

*Source:* OECD (2011), “Towards an OECD Skills Strategy”, OECD, Paris. Available at: [www.oecd.org/edu/47769000.pdf](http://www.oecd.org/edu/47769000.pdf) access June 2013; and OECD (2013), *Skills Development and Training in SMEs*, OECD Skills Studies, OECD Publishing Paris, <http://dx.doi.org/10.1787/9789264169425-en>.

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