Chapter 2
Aging and Migration: An Overview

K. Bruce Newbold

1 Introduction

For decades, global population concerns have focused on rapid population growth, driven by high birth rates and young populations, resulting in a global population explosion that saw the world's population grow from approximately 2 billion in 1900 to over 7.4 billion by 2016. Despite the assurance of continued population growth over the coming decades due to population momentum and persistently high fertility in some countries (notably sub-Saharan Africa), population aging—whereby the median age of a country or region increases due to declining fertility rates and increased life expectancy—has now emerged as *the* global population concern (Harper 2014).

Below replacement fertility levels and longer life expectancies have resulted in shrinking populations and aging populations. Japan, which is the world's 'oldest' country when measured by median age (46.9 years) has a total fertility rate of 1.5 (recalling that a fertility of 2.1 is typically considered to be required for replacement). With its low fertility rate, Japan's population is projected to decline from 125.3 million in 2016 to just slightly greater than 100 million by 2050, assuming no significant changes in fertility or international migration (Population Reference Bureau 2016). But Japan is far from alone: With the major exception of much of sub-Saharan Africa, the majority of the world's countries have either nearly or fully completed the demographic transition, transitioning from a high fertility and mortality regime to a low fertility and mortality regime (Franklin and Plane 2017). Fertility rates below replacement level are the new norm. Even in China, where concerns with high fertility and rapid population growth led to the implementation

K. Bruce Newbold (✉)
School of Geography & Earth Sciences, McMaster University, Hamilton, Canada
e-mail: newbold@mcmaster.ca

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of the one-child policy to hasten fertility reduction, concerns have turned to an aging population and its support given the rapid increase in the proportion of its population that is over 65 years.

Although aging is a global phenomenon, it will occur at a different pace and with varying intensities across countries and regions (Kim and Hewings 2013), with some countries already seeing dramatic aging, and others just starting to see their populations' age. Regardless, the old will represent an increasingly large proportion of the population, with implications for economic development, the welfare state, public finance, consumption and mobility patterns, communities, and labor force participation. Drawing upon multiple examples, the following chapter explores some of these issues, with the intent of setting the background for the balance of the book by providing the reader with an overview of aging and migration issues.

2 The Demography of Aging

Aging populations can be characterized by different demographic measures. Globally, the proportion of the population over 65 is expected to represent over 20% of the world's population by 2050. Being amongst the first to complete the demographic transition, western, developed countries have grown increasingly older, characterized by older median ages and larger proportional shares of their older populations (65+). For example, 18% of the developed world's population is now 65 years old or greater, compared to just 7% in the less developed world (PRB 2016). Many European Union countries, along with Japan, have some of the highest proportions of older populations, with 27% of Japan's population aged 65 or older, and 19% of the population in the European Union over age 65. Meanwhile, the median age (2016) in the EU is 42.7 years. Similarly, life expectancies are typically the greatest in the developed world, averaging 79 years compared to just 68 years in less developed countries.

Population aging is further demonstrated in the shift in old dependency ratios, defined as the ratio of the older (65+) 'dependent' population relative to the labor force aged population (aged 15–64) which can 'support' the older, dependent population. When there are fewer working-age adults relative to the old, the labor force age group has a greater dependency burden: more people to support with the same income and assets. Between 1960 and 2015, the proportion of dependents in the European Union (those 65 and over) increased from 15% to 29%, pointing to a shrinking labor force that is able to support the old (World Bank). In the United States, the old dependency ratio is expected to increase from the current (2015) ratio of 23% to 30% by 2020, reflecting the aging of the US population (Ortman and Velkoff 2014). At the global scale, the proportion of dependents per 100 workers has risen from 9% to 13% in the same period.

When we refer to an aging population, the literature has tended to define and focus on those who are 65 years old or greater, with 65 being the typical retirement age. But this single 65+ age group is far from homogenous. Increasingly,

discussions around aging societies have focused on the 'old-old', often defined as those who are 80 and over, while younger cohorts (i.e., 65–79) are the 'younger old', a group that typically retains a high quality of life, good health, either full or partial engagement in the labor force, and are more likely to move as compared to their older counterparts (Statistics Canada 2011). Beyond these usual dividers, it is also important to consider who *will* be old. The aging of the baby boom cohort, particularly in North America, parts of Europe, and Australia has been described by some as an approaching tsunami (Frey 2001), given the relative size of this cohort and their ability to shape the political and economic structure of their respective societies. Baby boomers have, for instance, strained health and education systems, and their movement in the United States has contributed to population growth in the Southwest, population decline of the Northeast, and the 'rural renaissance' as they passed through their most migratory years (Plane and Rogerson 1991; Plane 1992; Pandit 1997).

Although population aging reflects broad demographic processes, it has clear spatial patterns and ultimately implications, with rapidly aging regions and metropolitan areas reflecting both aging-in-place and the out-migration of younger cohorts (Frey 2001, 2011). In the United States, for example, northern rustbelt cities are, on average, older than their counterparts in the west and south, which have experienced in-migration of younger cohorts, driven by amenities and job opportunities. Typically, areas experiencing the fastest growth of the old are located in America's Sun Belt. At smaller spatial scales, a growing number of older households are found in suburban locations, a legacy of residential preferences amongst aging boomers and aging-in-place (Frey 2011). Similar patterns are found elsewhere, with large cities often having comparatively younger populations, while rural and smaller cities are often characterized by older populations.

3 Migration, Immigration and Aging

Although aging populations broadly represent the outcome of long-term population processes and fertility choices, an important exception is the impact of migration and/or immigration and the ability to (comparatively) rapidly change the demographic profile of a region. Countries such as Canada have used immigration to forestall population decline, with immigration now accounting for approximately two-thirds of Canada's population growth (Statistics Canada 2016). Immigration's impact can be dramatic, as illustrated by population projections reported by the Population Reference Bureau (PRB): In its 2007 World Data Sheet, the PRB projected that Germany's population would shrink from over 82 million in 2007 to 71.4 million by 2050. In its 2016 World Data Sheet, however, the PRB estimated Germany's population would decline to just 81.0 million by 2050, with the difference largely attributable to its intake of refugees in 2015 and 2016.

Reflecting the well-known mobility patterns across the life course (Rogers et al. 1978), increasing age is associated with lower propensities to migrate relative to

younger cohorts, an outcome observed regardless of location, time, or geographic scale. With increasing age, migrations become more difficult and costly (both physically and emotionally) as employment, families, other household assets or declining health tie individuals to their location. Many of the reasons for declining migration propensities by age can be attributed to life-cycle changes such as marriage, children, and empty nesting (i.e., Goetzke and Rave 2013; Plane and Jurjevich 2009), concepts made popular by Rossi (1955). Sjaastad's (1962) human capital theory also helps to explain differing migration rates by age, with young adults having a longer career time to recoup the costs of moving than older individuals.

The implication of the age-migration schedule is twofold. First, younger adults will typically migrate for economic reasons (Partridge and Rickman 2003) and to maximize their returns to human capital (Brown and Scott 2012). In doing so however, age-selective out-migration from a region (especially of younger labor force participants) can leave behind a smaller, older, poorer and less healthy population, a situation experienced across rural areas and small communities over-and-over again and reinforcing the spatial differences in the age structure of populations. Population loss, along with the loss of income, savings, and related human capital (Nelson 2005; Newbold and Meredith 2012) has implications for service delivery and the fiscal capacity of communities (Davenport et al. 2009). Concurrently, schools and other services or programs directed toward younger age cohorts may be forced to close or reduce the range of services offered in areas with shrinking and aging populations. Receiving communities, on the other hand, may benefit from in-migration by gaining human capital, transferable income (i.e., retirement), and offsetting population loss.

Second, lower mobility rates amongst the old mean that the majority of the old prefer to age-in-place, retaining local capital and relationships (i.e., Davis 2013). Between 2009 and 2010, for example, only 5.8% of older persons in the US moved, compared to 16.9% of the under 65 population. Amongst the old that moved, most (58.7%) stayed in the same county, and 78.2% remained in the same state (Administration on Aging 2011). For those that do relocate, their destination choices and the motivations for moving are often different from their younger counterparts.

Movement amongst the old reflects a series of moves that is frequently age dependent, often leading to a small 'retirement peak' observed at or around age 65—the typical retirement age, as individuals adjust their location and transition from work to retirement. Free from labor market or economic needs, the old typically migrate for a different set of reasons as compared to those still in the labor force. Amongst the young-old, migrations are often driven by amenities and 'down the urban hierarchy' into smaller urban or rural areas as evidenced by research in the United States (Karner and Dorfman 2012; Plane et al. 2005; Plane and Jurjevich 2009) and Canada (Newbold 2011). Migration decisions within this demographic typically reflect the desire for lower costs of living, reduced congestion, or to be closer to amenities and/or family (children and their own aging parents), along with knowledge of specific places such as where they grew up, vacationed, or worked, with a well-established literature that discusses the concept of return

migration amongst the old to their places of birth or long-term residence (see, for example, Newbold and Bell 2001). Amongst the old-old, late-life migrations are often associated with health issues, bringing individuals closer to family or into institutions for care.

With aging, patterns of labor force participation will change, leading to differential migration patterns. In some regions, the primary effect will be changes in the age structure, with concomitant declines in labor force participation rates. In other cases, migration will alter the number of people not in the labor force. The diversity of changes in participation pose different challenges for regions (Nichols et al. 2015). Declines in mobility rates and shifting labor market opportunities will have spatial effects. In the US and other countries, rates of migration at all spatial scales have declined, in part owing to population aging, with Karahan and Rhee (2014) estimating that population aging accounts for approximately 50% of the observed decrease in inter-state migration in the United States owing to a general equilibrium effect. But population aging is not the only reason for this decline, with Molloy et al. (2014) suggesting that part of the reason for the observed decline is due to a reduced net benefit to changing employers, making relocations (for employment reasons) less attractive. That is, a prime reason for the decline in movement is related to labor market opportunities. Evidence from Denmark (Mitze and Schmidt 2015) suggests that agglomeration economies are key drivers of migration, as compared traditional labor market and housing effects. Importantly, both studies suggest that the determinants of migration, and concomitantly the spatial effects of migration, are changing.

4 The Economics of Aging

With the share of its older population projected to increase from 8.3% in 2010 to nearly 24% in 2050 (Kochher and Oates 2014), China's rapidly aging population has raised concerns about its ability to support its older population given a shrinking workforce. At the same time, projections suggest that its economic growth will be reduced by as much as three percentage points per year in the coming years because of its shifting population structure (Sheets and Sockin 2013). But, while China may be an extreme example of the economic implications of an aging society given the pace of aging in the country, it is not alone: Shrinking populations and aging will challenge economies, social welfare systems, healthcare systems and labor markets across the globe. More broadly, because the old are generally less economically productive than the young, a growing older population suggests that economic growth will be slower than in the past and that the comparatively smaller labor-force aged cohorts will be required to support the older population. In turn, pressure will be exerted on pensions, health and long-term care with a smaller labor force supporting such programs, ideas which are explored further in the following paragraphs.

Reflecting shifting dependency ratios, one of the most visible outcomes associated with population aging will be the aging of the labor force and a comparatively smaller labor force relative to the old. Already, baby boomers have started to leave the work force and the size of the cohorts following baby boomers—or more precisely the workers and the taxpayers that will support baby boomers in their old age—are smaller. The loss of the working age population could have a significant impact on per capita income, unless the loss of labor can be compensated through other means, such as increased productivity (Park and Hewings 2007a) or through migration and/or immigration. Retirements will potentially result in a shortage of skilled labor, with a lack of middle-aged employees ready to fill senior management positions. The same problem is observed in health care, the resource sector, finance, teaching and education, with a bi-modal workforce of older, senior and experienced employees, fewer workers in the middle cohorts, and young and much less experienced workers. Immigration can help offset declines associated with an aging population, but only after immigrants acquire skills and experience to increase their productivity (Park and Hewings 2007b).

Aging populations may also have a significant impact on savings and capital accumulation. Older cohorts are less likely to spend on consumer goods as they move into retirement, despite having higher accumulated savings per capita than younger cohorts. At the same time, they tend to dissave by spending down their savings. While individuals may also save more for retirement expecting a longer lifespan, reductions in spending may be compounded by the fact that many baby boomers are heading into retirement carrying a larger debt load that has been encouraged by low interest rates and a culture of spending. The debt that boomers carry, along with their fixed incomes, will incentivize reduced consumer spending. Aging populations may be associated with declining economies, given reduced incentives to invest in new stores and housing and reduced infrastructure investment (Yoon and Hewings 2006).

If the workforce is not being replaced, then taxes and consumer spending that are part of this group are not being replaced. Future taxpayers will need to carry a heavier load as they pay for pensions, health plans and other services, assuming that the same level of services is maintained or desired. Consequently, aging populations are expected to increase fiscal burdens to governments (Park and Hewings 2007a). Population aging is expected to push public pensions and health care programs to consume greater proportions of gross domestic product (GDP), with changing demographics a concern for governments and employers alike. Nationally, expenditures associated with pensions and health care are projected to increase as a share of GDP, with public pension expenditures expected to represent approximately 15% of GDP in several European countries by 2050 (Kochher and Oates 2014). In the United States, the impact is less severe, with pension expenditures estimated to only increase from 6.8% of GDP in 2010 to 8.5% in 2050. Like many other countries, the US Social Security system is based on the taxation of workers to support the older, retired generation (Silverstein 2008). Given a smaller workforce and increased life expectancy, the number of beneficiaries has grown, leading to concerns that the Social Security system will be depleted or will

offer smaller benefits. For many employers, especially those that provide defined benefit plans to their employees (Silverstein 2008), pensions remain a high cost, even as many employers have moved toward defined contribution plans whereby the employee shoulders investment risks.

Concerns also revolve around public health care expenditures. In the U.S., public health expenditures are projected to more than double to 14.9% in 2050 (Kochher and Oates 2014). Large increases in expenditures related to health care are also expected in multiple countries due to the increased demands that will be placed on a range of services that are important to older cohorts, including health and long-term care. Household finances may also be stressed, forcing people to work into their retirement (Clements et al. 2012; OECD 2012, 2013). While this sounds problematic, it is important to realize that seniors are experiencing longer, healthier lives on average, with the greatest pressures on the health care (and other sectors) amongst the oldest old. Beyond health services, the range of community services that people require after they retire differs from that during other stages of life.

The age-structure of the older population at any particular geographic scale will have an impact on service demand and delivery. Older cohorts typically demand and use a different range of services as compared to younger cohorts, with the old typically being significant users of recreation services, public transit, affordable housing, and long-term care, amongst other services. Perhaps not surprisingly, older populations will likely demand changes in the allocation of public investments, including the reallocation of resources from children to meet the needs of the old. At smaller spatial scales, regional (i.e., state or provincial) and local social services and infrastructure needs will consequently change with the aging of the population. Coupled with employment loss, out-migration could have important implications for service delivery, economic development and planning. For example, the selective out-migration of workers along with relatively healthy and wealthy new retirees can leave behind an older, poorer and less healthy population, with implications for service delivery and fiscal capacity of communities (Davenport et al. 2009), while services geared toward younger cohorts, including schooling, will be forced to close.

Finally, with higher levels of savings and social welfare systems in place, developed nations are comparatively well prepared for an aging population. For them, the question is whether aging populations will lead to increasingly larger proportional shares of GDP. Emerging countries, on the other hand, typically spend much less on social welfare and health programs. The challenge for these countries is to build their social welfare and health programs to meet the needs of their aging populations even as they experience slowing economic growth (Clements et al. 2012; Kochher and Oates 2014).

5 Policy and Aging Populations

Although there are comparatively few tools, including changing labor policies, fertility preferences, migration, and immigration, population aging can be offset or minimized. But, the effectiveness of each of these tools is limited. For example, changes to labor policies such as delayed retirement, changes in the eligible age for retirement benefits, or reductions in benefits could offset or diminish some of the impacts of an aging population (i.e., Park and Hewings 2007c). Several countries, including the United States, Canada, the United Kingdom and Australia, have raised the age at which individuals are eligible for state-funded pension plans, and/or have abolished mandatory retirement ages. However, such policy changes may be tinkering at the margins, and also have negative effects in terms of overall losses to welfare (Park and Hewings 2007c).

Second, changes to fertility, and specifically policies, programs and incentives aimed at increasing fertility levels can reduce the median age of the population by increasing the fertility rate and hence the proportion of the young. But, programs or policies meant at enhancing fertility levels are long-term and have a poor track record: the province of Quebec in Canada, France, and other countries have tried to enhance fertility but with relatively little success (Haub 2008). Attempts to increase fertility levels through the provision of various financial incentives such as paid maternity and paternity leave, free or reduced-cost childcare and tax benefits, have some (albeit limited) impact on fertility rates (Haub 2008), although increased fertility may just reflect a change in the timing of fertility, but no real increase in the number of desired children. Even in China, which is facing the prospect of the very rapid aging of its population owing to its one-child policy, anxiety over its expanding elderly population and smaller labor force led the Chinese government to abandon its one-child policy in 2014. To date, China's fertility rate has not changed dramatically, suggesting that low fertility is here to stay. Moreover, altering fertility choices tends to be a rather long term approach to offset aging, not to mention the fact that you need to mess with social conventions and needs.

Third, migration and immigration are potentially the most viable options for altering age profiles over the short-term. Internal, domestic migration could offer relief, but only at the regional level, given population gain in one region implies population loss in another. While the old have relatively low rates of mobility, a growing older population means by default that more old will move, even if migration rates stay the same. That is, there is an important distinction between the rate of migration and the population that is at-risk of moving, with the growth of the 65+ demographic ensuring that the number of older migrants will increase. Migration will likely have the greatest impact at the municipal scale, leading some communities to market themselves as retirement destinations and attracting migrants to amenity rich areas (Kupiszewski et al. 2001a), access to health care, and/or lower housing costs and lower taxes (Karner and Dorfman 2012; Kupiszewski et al. 2001a, 2001b; Kawase and Nakazawa 2009).

Certainly, the ability to attract seniors may be beneficial in the face of long-term population aging, with the intent of maintaining or growing a population and utilizing existing infrastructure. However, it has not been established that promoting the concentration of retirees in a community is an effective economic development policy, despite the impact of their local expenditures and taxation (Serow 2003). Further, while communities that can attract in-migrants may benefit from the in-flow, these migrants must come from somewhere, meaning that communities that experience out-migration are placed at a disadvantage. In the Canadian context, for example, western provinces tend to have younger median ages, while the eastern, Maritime provinces tend to be older, reflective of decades of out-migration from the economically depressed east and in-migration to the resource rich western provinces, particularly Alberta (Statistics Canada 2012). In both cases—receiving and sending centers—changing age profiles will have implications including for the location and types of services provided (Gaigné and Thisse 2009). Inevitably, however, everyone ages, and unless a community is able to maintain the inflow of younger migrants, the economic benefits of being an aging community could turn to an overall cost, given the demand on related programs and services as noted earlier in this chapter.

This therefore leaves immigration as an option to reduce or slow the aging of a population. But such a policy can only work if immigrants younger than the median age of the population are encouraged to immigrate. Immigration can aid population growth, but countries cannot offset aging without tremendous increases to annual immigration flows (United Nations 2001), a policy that is problematic as governments seek to integrate newcomers, with tensions over immigration highlighted in European elections in 2016 and the rise of anti-immigrant parties. Moreover, even immigrants will age and join the ranks of the retired, meaning that the flow of younger immigrants must be sustained.

6 Conclusions

Population aging will have significant effects on local, regional and national economic systems and policies. Although the impacts of population aging can be minimized, policy options are limited given the inability, slow response times, or minimal impact of programs focusing on increasing fertility rates or labor market policies to offset population aging. Of all the policy options, migration and/or immigration appear to offer short-term solutions to population aging. But neither option will alleviate or solve population aging, especially in a regionally heterogeneous labor market where aging and migration may be both complementary and conflicting phenomena.

Proportionately, migration by the old is not a significant phenomenon given low migration rates amongst this group. However, aging populations mean that larger numbers of seniors will be on the move in the coming years. As noted elsewhere in the literature (i.e., Newbold and Meredith 2012), policy concerns associated

with the migration of the old will be primarily located at the local level, where recreation, community, and other services are delivered and urban planning and housing policies are created and implemented. Conversely, the labor and economic impacts of aging will be both regional and national in scope.

Regardless of whether communities are gaining or losing older populations, there is a need for communities and governments to be proactive in planning and program development to meet the needs of an aging population. Developed by the World Health Organization (2007), concepts such as "Age Friendly Communities" can be employed to incorporate "active aging practices" into the local context, including areas such as transportation and the built community. The question is, however, whether communities are adequately prepared to address the needs of an older population, regardless of whether they are net receivers or senders of older migrants.

Despite the interest and attention given to aging and shrinking populations over the past decade, substantive questions remain, with additional research and insight required in a number of areas, some of which the balance of this book cover. Topics such as the impact of migration on the labor market, population movements, housing, pension systems, and differences in the experiences between the developed and developing world require additional insights. The unprecedented changes to the population structure of many countries pose huge challenges for their economies and their aging populations, and have prompted questions including:

- Will their capacity to support a growing number of retirees and fund long-term health care for those of advanced age prove sufficient?
- How will domestic migration respond to changing demographics?
- Can immigration offset population aging and how will it reshape society?
- What other demographic or socioeconomic policies can be used to decrease the impacts of an aging society?
- What policy implications are associated with aging populations, and how can policy best address aging?

The following chapters explore some of these ideas in greater detail.

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