

Global population ageing

Murat Üngör

murat.ungor@otago.ac.nz



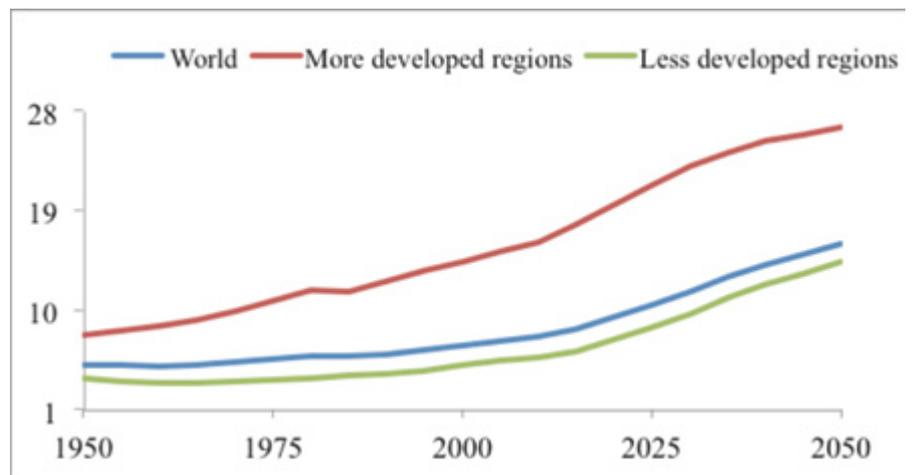
Source: www.flavourmag.co.uk/the-uks-ageing-population

In recent years, the effect of demography on the global economy has received a lot of attention due to major changes in the age structure of the global population, in particular the increasing proportion of people over the age of 65. The possible consequences of an ageing global population are among the most hotly debated topics in academic and policy circles.¹ Many countries face the problem of how to finance retirement consumption for older people, and how to reform social services to cope with the increased burden.²

WE'RE ALL GETTING OLDER

Figure 1 shows the proportion of elderly people – defined as aged 65 years and over – for selected country groups during 1950-2050.³ The share of the global population that is elderly is increasing in both “more developed” and “less developed” regions.

Figure 1: Population aged 65+ as percentage of total population (%)



More developed regions: Europe, Northern America, Australia, New Zealand and Japan.
Less developed regions: all regions of Africa, Asia (except Japan), Latin America and the Caribbean plus Melanesia, Micronesia and Polynesia.

Source: United Nations, World Population Prospects, the 2015 Revision.

1. See, for example, Beard et al. (2011), Bloom and Luca (2016) and the references therein.
2. See McGrattan and Prescott (2016) for a recent discussion of this problem for the United States.
3. The data used in this article is drawn mainly from population estimates and projections from the United Nations' World Population Prospects (2015 revision). I use the table "Percentage total population (both sexes combined) by broad age group, major area, region and country, 1950-2100", which is available at: esa.un.org/unpd/wpp/Excel-Data/population.htm. Data are available for every five years, starting in 1950. The projections are based on the medium fertility assumption of the database during 2015-2050. Bloom and Luca (2016) discuss the reliability of population projections.

At the global level, the proportion of the population aged 65 years and over (65+) was about 8.3% (more than 600 million people) in 2015, up from 5.1% (more than 120 million people) in 1950.

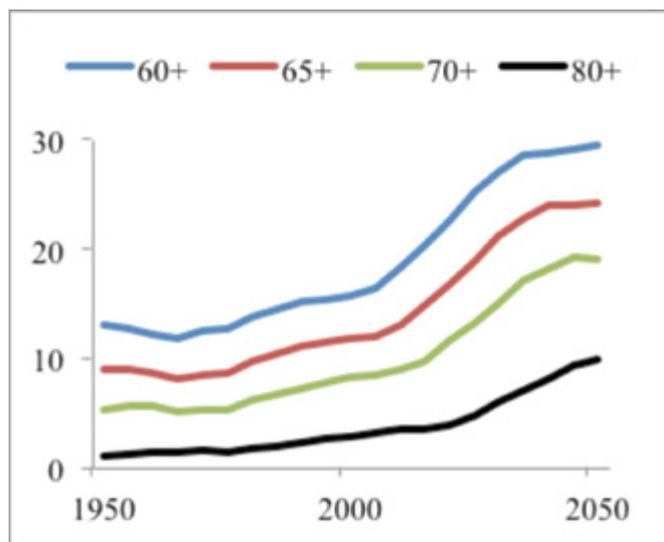
This ageing trend will speed up, with the United Nations forecasting the share of people aged 65+ will reach 16% (close to 1.6 billion people) by 2050. According to UN projections, the share of people aged 65+ rose from 7.7% of the population in more developed regions in 1950 to around 17.6% in 2015, with further dramatic increases predicted whereby the share of people aged 65+ reaches 26.5% by 2050.

Figure 2 plots population shares for NZ, Australia, China and Japan over a 100 year period starting in 1950 for four age groups: 60+, 65+, 70+ and 80+. Older age cohorts are beginning to account for a substantial proportion of the total population.

As can be seen in the figure, the fraction of the NZ population aged 59+ was slightly more than 20% in 2015, compared to 13.1% in 1950. In Australia, the proportion of people 65+ was 15% in 2015 and is expected to jump to 22.5% by 2050. In Japan, people 65+ made up more than a quarter of the population in 2015. Japan's population is forecast to fall to about 107 million by 2050 (from more than 126 million in 2015), with 36% of Japanese aged 65+.

Figure 2: Share of older people (%)

(a): New Zealand



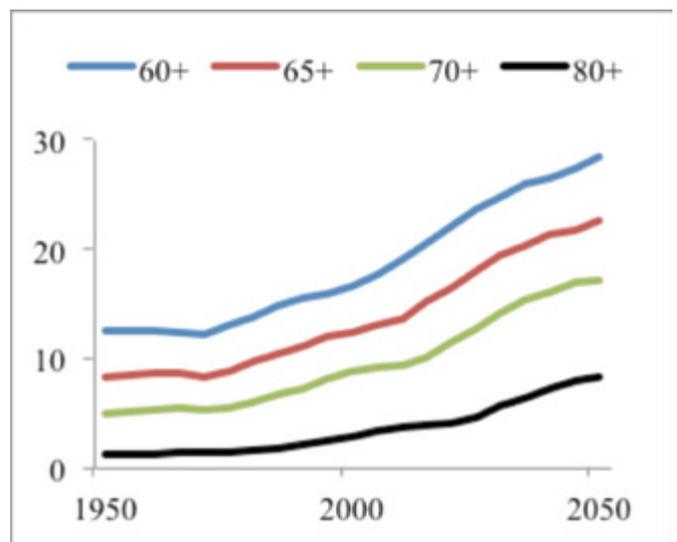
CROUCHING TIGER, AGEING DRAGON

China is the most populous country in the world and, like most countries, its population is ageing. According to UN projections, in the 50 years between 2000 and 2050 the share of the Chinese population 60+ will more than triple from 9.9% to 36.5%. The fraction of people 80+ will begin to accelerate after 2025 and reach 8.9% in 2050.⁴

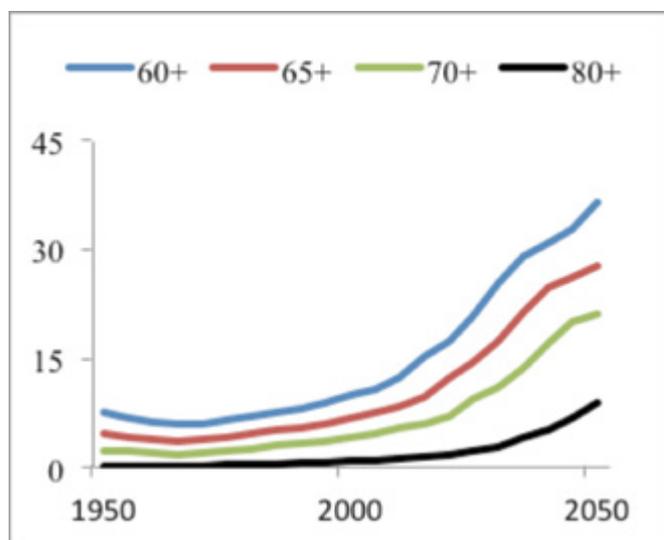
At the same time as its population has been ageing, China's fertility rate has been falling dramatically. In 1965 the fertility rate was 6.4 – meaning that women then gave birth to 6.4 children on average. The fertility rate was more than 5 until 1973, when it started to decline, and the rate dropped sharply after the mid-1980s. In 1990, it was 2.4, and in 2015 it was just 1.6 (World Bank, 2017) – less than the “replacement rate” of slightly more than 2 at which women give birth to just enough babies to sustain population levels.

4. See Smith et al. (2014) for an insightful review of ageing in China.

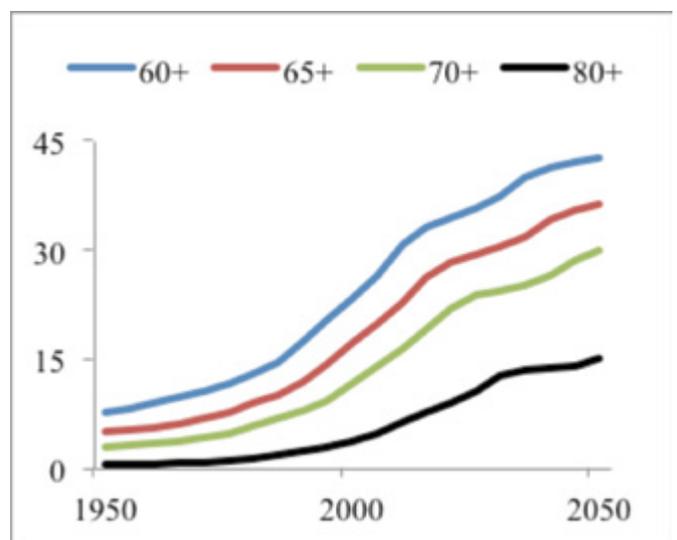
(b): Australia



(c): China



(d): Japan



Source: United Nations, World Population Prospects, the 2015 Revision.

ON THE BACKS OF YOUNGER PEOPLE

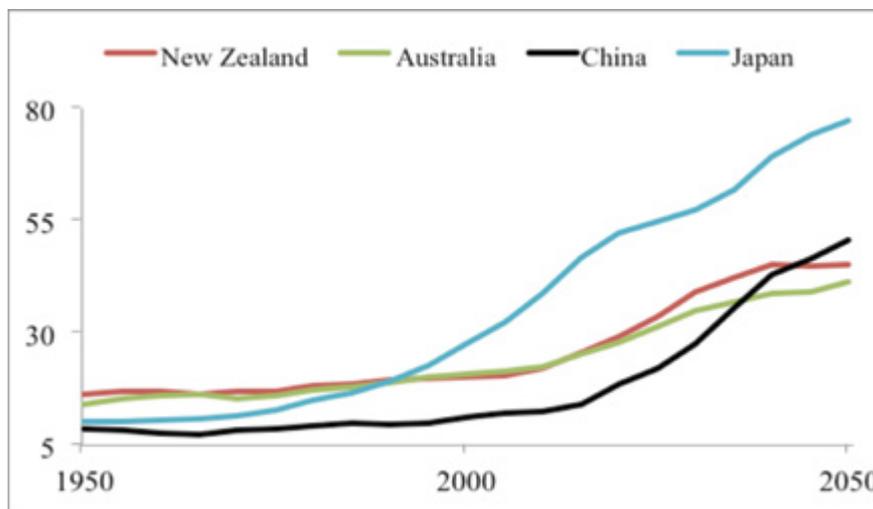
One important statistic for characterising population ageing is the “old-age dependency ratio”: usually defined as the number of individuals aged 65+ per 100 people of working age, defined as those aged 20-64. The old-age dependency ratio tells us how many retired people a potential worker has to sustain. The higher the ratio, the more elderly people there are to be supported by younger working adults.⁵ The ratio is rising around the world.

Figure 3 shows the dramatic rise in Japan's old-age dependency ratio. In 2015 the ratio was 47.0%, already the world's highest. By 2050 it is forecast to exceed 77% – i.e. 77 elderly people for every 100 people of working age.

Continued increases in longevity will ensure that the old-age dependency ratio rises sharply in China as well. There was one elderly person for every 10 working-age people in China in 1995 (10% dependency ratio); by 2050 the ratio is expected to increase to 1 for 2 (50%).

In New Zealand, the old-age dependency ratio was 16.3% in 1950, increasing to 25.6% in 2015. By 2050 the ratio will reach 45.1% in NZ – and 41.2% in Australia.

Figure 3: Old-age dependency ratios (%)



Source: United Nations, World Population Prospects, the 2015 Revision.

LIVE LONG AND PROSPER!

As populations grow older, increases in old-age dependency ratios are indicators of the added pressures that economies have to withstand. Population ageing has important policy implications for health and social welfare systems, income distribution and immigration. For example, the burden on hospital waiting lists and the affordability of public superannuation schemes will continue to grow.

As life expectancy increases and treatments for life-threatening disease become more effective, the issue of maintaining wellbeing at advanced ages is growing in importance (Steptoe et al., 2015). How governments, individuals and financial institutions should share responsibilities for sustaining income security at old age is a major policy issue. Policies that can sustain income security for people in disadvantaged groups such as women, low-skilled individuals and immigrants are also important.

Maintaining older people's wellbeing is not only related to protecting their living standards by providing income security, but also related to issues including subjective wellbeing,⁶ satisfaction with daily activities, physical and mental health, availability of high-quality long-term care and other health care issues. Policy responses should combine insights from health, sociology, psychology, economics and public policy.

QUESTIONS TO CONSIDER

1. What is demographic change?
2. Why does demographic change matter to politics? Should politicians and policy-makers attempt to influence the population directly?
3. Why and how does population ageing matter? What are the main challenges of an ageing society?
4. What are the major demographic shifts facing New Zealand in the coming decades?

REFERENCES AND FURTHER READING

- Beard, J. R., Biggs, S., Bloom, D. E., Fried, L. P., Hogan, P., Kalache, A., Olshansky, S. J. (eds). (2011), *Global Population Ageing: Peril or Promise*, World Economic Forum.
- Bloom, D. E., Luca, D. L., "The global demography of aging: Facts, explanations, future". In: Piggott, J. and Woodland, A. (eds), *Handbook of the Economics of Population Aging*, Elsevier, 2016, pp. 3-56.
- McGrattan, E. R., Prescott, E. C. (2016), "An aggregate model for policy analysis with demographic change", *Federal Reserve Bank of Minneapolis Staff Report 534*.
- Sanderson, W. C., Scherbov, S. (2005), "Average remaining lifetimes can increase as human populations age", *Nature*, 435, 811-13.
- Sanderson, W. C., Scherbov, S. (2010), "Remeasuring aging", *Science*, 329, 1287-88.
- Smith, J. P., Strauss, J., Zhao, Y. (2014), "Healthy aging in China", *Journal of Economics of Ageing*, 4, 37-43.
- Steptoe, A., Deaton, A., Stone, A. A. (2015), "Subjective wellbeing, health, and ageing", *The Lancet*, 385, 640-48.
- World Bank. 2017. *World Development Indicators*. <http://databank.worldbank.org/data/reports.aspx?source=world-development-indicators>.

5. Old-age dependency ratio is one of the most widely used metrics to measure the degree to which a nation is considered to be aged. Sanderson and Scherbov (2005, 2010) suggest a new method to measure ageing prospectively to take into account both improved life expectancy and health across the life-course. As life expectancies increase and people remain healthy longer, measures based solely on fixed chronological ages can be misleading.

6. Steptoe et al. (2015) distinguish three aspects of subjective wellbeing: (i) evaluative wellbeing (or life satisfaction), (ii) hedonic wellbeing (feelings of happiness, sadness, anger, etc.), and (iii) eudemonic wellbeing (sense of purpose and meaning in life).