

Navigating the uncharted waters

Population ageing in the UK

A provocation by Professor David Bloom and Paige Kirby with an introduction from Professor Andrew Scott



Infrastructure

Technology

Economy

Life expectancy

Culture and society

Inequalities

Population change

About the ILC

ILC-UK was established in 1997, as one of the founder members of an international network on longevity. In the UK, we're the specialist think tank on the impact of longevity on society. We have unrivalled expertise in demographic change, ageing and longevity.

We use our expertise in demographic change to highlight the impact of ageing on society, working with experts, policy makers and practitioners to provoke conversations and pioneer solutions for a society where everyone can thrive, regardless of age.

As part of the Global Alliance of ILCs, we work with leading experts on ageing across the globe. In this paper one such expert – Professor David Bloom – argues that the UK needs to embrace a bold and broad new policy approach to meet the challenges and capitalise upon the opportunities of an ageing population.

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Introduction

The UK's population is changing significantly. It is evident when you look around the streets or your workplace, read the news or visit a hospital. The UK, along with the rest of the world, is undergoing a massive economic and social experiment as the proportion of older people rises from already historic highs.

For decades demographers have warned of the problems an ageing society will bring to the UK. With ageing now identified by the Government as one of its four "grand challenges", the time for action seems finally to have arrived. However, this is where the difficulties begin. Is ageing a problem or an opportunity? What exactly are the problems? What are the most critical actions to take and how do we take them? David Bloom and Paige Kirby seek to answer these questions with insight and perception in this welcome UK policy note.

In this short paper, the authors implicitly draw attention to a deep paradox. The facts may be simple – there are more older people and the average age of society is increasing. However, the policy response needed is broad and nuanced. It is about redesigning policy and institutions to support both a shift in the population's age structure and a shift in how individuals live their lives.

Two factors are at work in changing population structures. First, there is a *weight of numbers* force, due to declining birth rates and a large baby boomer cohort passing through society. If older individuals are unproductive, make financial claims on society and experience poor health, this strains the economy, public finances and relationships between generations. The second factor is the extraordinary *increase in life expectancy* that has occurred – by more than 10 years since 1950, according to Bloom and Kirby, with another five years expected by 2050. Concern is deepening over the widening inequality in lifespan and the growing gap between lifespan and healthspan. However, it remains the case that in general the UK population is living for longer and in better health than past generations.

As Bloom and Kirby note, this provides opportunities as well as problems. It also means that there are millions of people in the UK who are experiencing this demographic transition. They are ageing differently both from past generations and from each other. The

sheer weight of numbers of older people in itself reveals a great diversity as to how people age and what they need. This is not a single problem with a single, “magic-bullet” solution.

As more and more people live into old age, there are “looming crises for the economic infrastructures that support older people”. In the UK this is most evident in the political problems around social care. Despite the fact that an ever-growing proportion of older people is able to live independently, the increase in the number of older people is overwhelming the infrastructure. We need more resources, innovative policies and leveraging of technology to tackle this urgent problem.

However, the way in which people are changing how they live their life at all ages is often lost in the weight of numbers argument. Bloom and Kirby focus on a particularly important part of that – the rise in the number of older workers, with the increasing proportion of British people working after 50, 65 and 70 years of age. They stress that this needs to be supported by a range of policies aimed at retraining, employment flexibility and changes to working conditions. This has to be one of the UK’s key economic priorities in response to an ageing society.

The report also highlights how the ageing society agenda is about a lot more than just health. How we age also depends on work and working conditions, our environment and community, and a host of broader factors. Successful implementation of the “comprehensive, multifaceted portfolio of solutions” recommended by the authors will require substantial coordination across diverse government departments.

Such coordination is challenging, which is why it is welcome news to see the government recently announce the establishment of a UK Longevity Council. There can be few aims more central to government action than helping as many people as possible live as long as possible, as healthily as possible and in a productive and fulfilled way. Hopefully the establishment of a Longevity Council will help emphasise the importance of this as a unifying principle of government policy and start to add genuine focus to the stated policy aim of providing five more years of healthy life for everyone. It is important too that the Longevity Council focus on all of life and that policy is focused on every generation. A common mistake is to assume that tackling an ageing society is about dealing with older

people. In reality it is about all stages of life and redesigning a life course to match the longer life spans today's children can expect.

As Bloom and Kirby stress, "while daunting...this new set of challenges is not insurmountable. Demographic trajectories are not set in stone, nor are their implications for social, health and economic outcomes". This is evidenced by the increase for more than 100 years in the old-age dependency ratio while the UK economy continues to prosper.

We need a broad and clear set of policies which focus on maximising the opportunities that come from longer, healthier lives while minimising in a dignified way the costs of an ageing society. The demographic factors behind an ageing society represent one of society's greatest achievements. Making sure that we turn it to our advantage will hopefully be our next. The balanced but positive analysis of Bloom and Kirby is precisely the kind of foundation stone we need to build on, if we are to succeed.

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Navigating the uncharted waters of population ageing in the UK

Introduction

The UK's population is ageing more rapidly than ever before. In 1997, about one in every six people (16%) numbered among the older population (ages 65+). This increased to one in every five (18%) by 2017, and this share is expected to reach about one in every four people (24%) within the next two decades.¹

This demographic shift toward an older population is also sweeping many other nations. By 2050, the populations of Japan, Spain, Portugal, Greece, and South Korea are projected to have an older population share above 35%.²

We should celebrate these significant and unprecedented gains in longevity and mortality reduction. However, such evolving demographics also result in several socioeconomic and health consequences for society, including increasing old-age dependency ratios, fiscal stress on pension systems, rising healthcare demands, labour force shortages, and economic slowdowns. The issues are so critical that the Conservative Party's 2017 manifesto identifies population ageing as one of the "five giant challenges" facing Britain today.³ As the share of older citizens rises in the UK and the world at large, addressing the mounting force of population ageing will become a central policy challenge for many countries over the coming decades.

¹UK Office for National Statistics. Overview of the UK population. 2018 Nov [cited 2019 Apr 5]. Available from: <https://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration>.

²United Nations, Department of Economic and Social Affairs, Population Division. File POP/7-1: total population (both sexes combined) by five-year age group, region, sub-region and country, 1950–2100 (thousands) [dataset]. 2017 Jun [cited 2019 Apr 5]. World Population Prospects: The 2017 Revision. Available from: <https://population.un.org/wpp/Download/Standard/Population/>.

³The Conservative and Unionist Party. Forward, together: our plan for a stronger Britain and a prosperous future. London: St. Ives PLC; 2017. Available from: <https://www.conservatives.com/manifesto>.

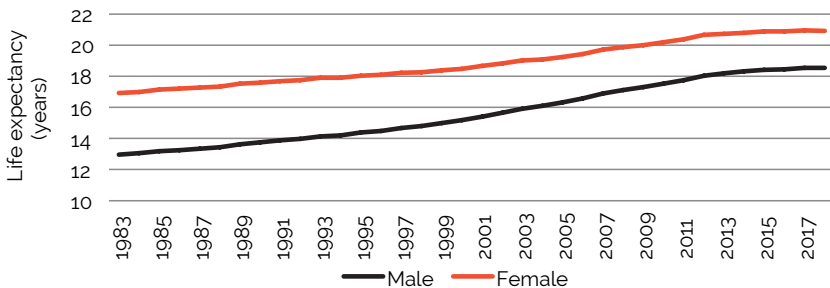
Underlying drivers of population ageing

Three key driving forces underlie much of this demographic shift: declining fertility, increasing longevity, and the progression of large-size cohorts through the population pyramid.

Worldwide total fertility rates (TFRs) have plunged by a striking 50% since 1950, dropping from a global average of 4.7 live births per woman to only 2.4 live births in 2017.⁴ At only 1.7, the UK's current TFR is lower still, making it one of more than 90 countries that have reached a watershed level below the worldwide replacement rate of 2.05.⁵ Such a downtrend in fertility reduces population growth and, all else being equal, effectively elevates the elder share.

Second, rising life expectancy over time further intensifies the age distribution's skew toward older people. In the UK, life expectancy at birth has increased by more than 10 years since 1950 and is projected to rise an additional five years by 2050.⁶ Alongside advances in medicine, technology, and healthcare, life expectancy conditional on reaching age 65 has also been steadily increasing (Figure 1).⁷

Figure 1: Life expectancy conditional on reaching age 65, United Kingdom



Source: UK Office for National Statistics. National Life Tables, United Kingdom. 2018

⁴Measured over the period 1950–2017. Murray CJL, Callender CSKH, Kulikoff XR, Srinivasan V, Abate D, Abate KH, et al. Population and fertility by age and sex for 195 countries and territories, 1950–2017: a systematic analysis for the Global Burden of Disease Study 2017. *The Lancet*. 2018 Nov;392(10159):1995–2051. Available from: [https://www.thelancet.com/pdfs/journals/lancet/PIIS0140-6736\(18\)32278-5.pdf](https://www.thelancet.com/pdfs/journals/lancet/PIIS0140-6736(18)32278-5.pdf).

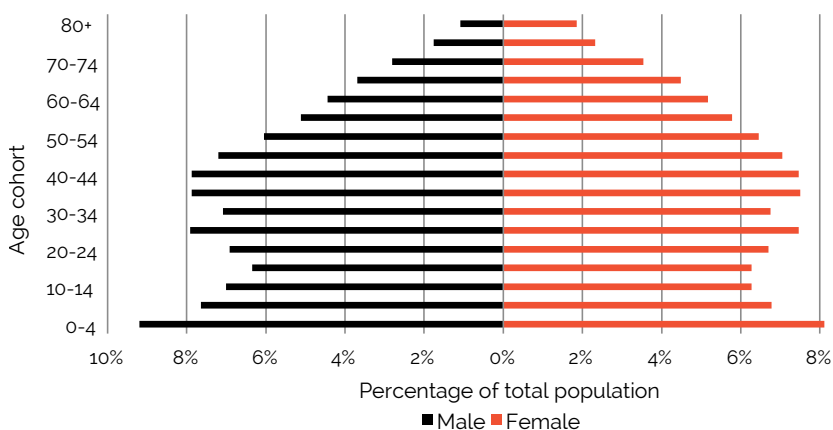
⁵Murray et al. (2018).

⁶UN life expectancy estimates are aggregated to five-year periods (e.g., 1950–1955, 2015–2020, and 2050–2055). United Nations (2017).

⁷Life expectancy based on mortality rates experienced in the preceding three-year period. UK Office for National Statistics. National Life Tables, United Kingdom [dataset]. 2018 Sept 25 [cited 2019 Mar 11]. Available from: <https://www.ons.gov.uk/peoplepopulation-andcommunity/birthsdeathsandmarriages/lifeexpectancies>.

Third, the progression of the UK's post-World War II baby boom generation to older ages has markedly affected the country's age structure and will continue to do so over the next few decades (Figures 2A–2C).⁸ Dividing the population into five-year age brackets, children aged 0–4 accounted for the majority share (8.6%) of the UK's age distribution in 1950, while those aged 80 and above accounted for only 1.5%. As the baby boom generation moves through the population pyramid, its considerable size is dramatically reshaping this distribution. Projections estimate that by 2050, those aged 80 and above will account for the majority share of the population at about 10%, nearly seven times their 1950 share.

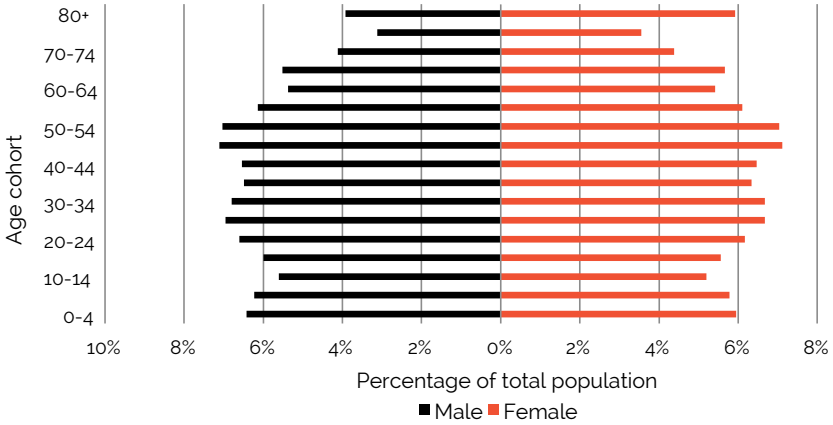
Figure 2A. Population of the United Kingdom by age and sex, 1950



Source: United Nations, Department of Economic and Social Affairs, Population Division. World Population Prospects 2017.

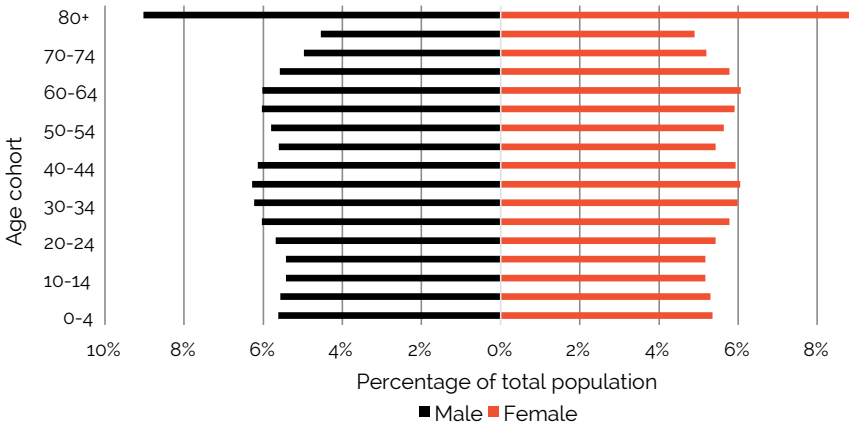
⁸United Nations, Department of Economic and Social Affairs, Population Division. File POP/7-2: Male population by five-year age group, region, subregion and country, 1950–2100 (thousands) [dataset]; File POP/7-3: Female population by five-year age group, region, subregion and country, 1950–2100 (thousands) [dataset]. 2017 Jun [cited 2019 Apr 5]. World Population Prospects: The 2017 Revision. Available from: <https://population.un.org/wpp/Download/Standard/Population/>.

Figure 2B. Population of the United Kingdom by age and sex, 2015



Source: United Nations, Department of Economic and Social Affairs, Population Division. World Population Prospects 2017.

Figure 2c. Population of the United Kingdom by age and sex, 2050



Source: United Nations, Department of Economic and Social Affairs, Population Division. World Population Prospects 2017.

Challenges facing an ageing society

This remarkable demographic transition is sounding alarm bells among senior advocacy groups, policymakers, economists, and other stakeholders. Perhaps most immediately relevant to those who are ageing and their friends and families are the psychosocial costs of growing old. The popular press and social awareness campaigns, such as those run by Age UK and the Campaign to End Loneliness, increasingly recognise the importance of loneliness as an emerging risk factor for an ageing population, painting visions of vulnerable and isolated seniors.⁹ Long-term solitude and continued detachment from mainstream society can have potentially devastating health consequences, especially for older people.¹⁰ This concern led Prime Minister Theresa May to appoint the world's first minister for loneliness, Tracey Crouch, in early 2018.¹¹

In addition to these social and mental health implications, economists are warning of looming crises for the economic infrastructures that support the older population. The former US Secretary of Commerce, Pete Peterson, went so far as to describe global ageing as a "threat more grave and certain than those posed by chemical weapons, nuclear proliferation, or ethnic strife".¹² Several economic factors, which generally stem from the life-cycle pattern of production and consumption in which older people do not produce as much as they consume, justify this concern.

⁹See, for example, Davidson S, Rossall P. Evidence review: loneliness in later life. Age UK. 2015 Jul [cited 2018 Mar 11]. Available from: <https://www.ageuk.org.uk/information-advice/health-wellbeing/loneliness/>; Campaign to End Loneliness. The facts on loneliness. 2019 [cited 2018 Mar 12]. Available from: <https://www.campaigntoendloneliness.org/the-facts-on-loneliness/>; Siddiqi N. Britain's loneliness epidemic: "This was the best day out in ages", said Mary, after a trip to the doctor. *New Statesman America*. 21 Nov 2018. Available from: <https://www.newstatesman.com/politics/uk/2018/11/britain-s-loneliness-epidemic-was-best-day-out-ages-said-mary-after-trip-doctor>; Campbell D. Loneliness among over-50s 'is looming public health concern': *The Guardian*. 24 Sep 2018. Available from: <https://www.theguardian.com/society/2018/sep/25/loneliness-among-over-50s-is-looming-public-health-concern>.

¹⁰Singer C. Health effects of social isolation and loneliness. *Journal of Aging Life Care*. 2018;28(1):4–8. Available from: https://www.aginglifecare.org/ALCA_Web_Docs/journal/ALCA%20Journal%20Spg18_FINAL.pdf; Xia N, Li H. Loneliness, social isolation, and cardiovascular health. *Antioxidants and Redox Signaling*. 2018;28(9): 837–51. Available from: <https://www.liebertpub.com/doi/full/10.1089/ars.2017.7312>.

¹¹John, T. How the world's first loneliness minister will tackle "the sad reality of modern life." *Time*. 25 Apr 2018. Available from: <http://time.com/5248016/tracey-crouch-uk-loneliness-minister/>.

¹²Peterson, PG. Gray dawn: the global aging crisis. *Foreign Affairs*. 1999 Jan–Feb;78(1):42–55.

First, as retirees come to outnumber new entrants to the workforce, labour shortages may lead to economic growth slowdowns. With the approach of Brexit, potential border closures that threaten to stifle trade and employment flows between Britain and the continent could further magnify these shortages.¹³ Second, some economists warn of asset market meltdowns as older people liquidate their assets to support themselves in old age and as overall demand for assets (especially risky ones) goes down.¹⁴ Third, healthcare costs will mount as the elder share grows. This arises from the fact that diseases of old age – including noncommunicable diseases (which already account for nearly 90% of mortality in the UK¹⁵) such as cancer, chronic obstructive pulmonary disease (COPD), heart disease and diabetes – are especially expensive to treat. Not only will demand for healthcare services be higher overall, but the services for a swelling senior population are likely to be relatively more complex and costly.¹⁶ Finally, an ageing population places considerable stress on government pension and social security systems. Today's 65-year-olds live notably longer than their predecessors (Figure 1); men and women who reach retirement age can, on average, expect to live an additional 19 or 21 years, respectively. Gains in post-retirement life years raise demand on government payment obligations, which become increasingly harder to meet as the size of the workforce paying into the system dwindles.

¹³Consultancy.UK. UK risks labour shortage of millions by 2030. 17 Jul 2018. Available from: <https://www.consultancy.uk/news/17942/uk-risks-labour-shortage-of-millions-by-2030>.

¹⁴See, for example, Siegel JJ. Stocks for the long run: the definitive guide to financial market returns and long-term investment strategies. 2nd ed. New York: McGraw-Hill; 1998. This hypothesis, however, remains a subject of debate among economists: see, Thenuwara W, Siriwardana M, Hoang N. Demographics and assets markets: a survey of the literature. *Theoretical Economics Letters*. 2017;7:782–94. Available from: <https://pdfs.semanticscholar.org/g12a/5d6d196c3405e37b3a50d797cbf65a27ba44.pdf>.

¹⁵2016 values refer to the share of all deaths for all ages by underlying causes. The World Bank. Cause of death, by non-communicable diseases (% of total) [dataset]. [Updated 2019 Apr 24; cited 2019 Apr 25]. World Development Indicators. Available from: <https://data.worldbank.org/indicator/SH.DTH.NCOM.ZS>.

¹⁶National Research Council (US) Panel on a Research Agenda and New Data for an Aging World. Preparing for an aging world: the case for cross-national research. Washington, D.C.: National Academies Press; 2001. pp. 200–19. Available from: <https://www.ncbi.nlm.nih.gov/books/NBK98379/>; Ferreira L. How does an aging population affect a country? The World Bank: News. 1 Sept 2016. Available from: <http://www.worldbank.org/en/news/feature/2016/09/05/uruguay-como-afecta-pais-envejecimiento-poblacion>.

Many policymakers tracking age patterns and voter preferences within their constituencies are mindful that the force of population ageing could have far-reaching political implications. An expanding elder share skews political clout toward the older generations and their priorities, which could hamper efforts to accomplish certain policy reforms aimed at reducing the burden an ageing society places on pay-as-you-go pension and healthcare systems.¹⁷ A critical mass of older voters may not be inclined to support, for example, raising the retirement age and working longer themselves to alleviate fiscal pressure or spare younger adults from paying higher taxes.¹⁸

Scope for solutions: Behaviour, policy and innovation

No single, magic-bullet solution will effectively address all the challenges tied to population ageing. Ownership of these challenges and their associated burdens belongs to various stakeholders, ranging from local, national, and international policymakers, to researchers and medical professionals, to the private sector and, of course, to the ultimate stakeholders: those who are reaching older age and their families and friends. Accordingly, the successful mitigation of the burdens of ageing on society will require a comprehensive, multifaceted portfolio of solutions. Three broad areas in particular can be mined for potential solutions: behaviour, policy, and innovation.

Behaviour

One key behavioural change that employers and policymakers can effect is to implement programmes to enable older individuals to remain in the workforce longer. These may offer retraining or reassignment to jobs that are better aligned with the interests and capacities of older individuals; changes to the physical work environment to accommodate health conditions; and coordination of flexible schedules and remote work. Reducing the impediments to work participation for older people will help to ease pressure on public finances, as it has important tax-raising potential, can

¹⁷See, for example, Winkler H. How will ageing populations affect politics? The World Economic Forum. 18 Jun 2015. Available from: <https://www.weforum.org/agenda/2015/06/how-will-ageing-populations-affect-politics/>.

¹⁸For example, protestors led a demonstration outside parliament last October, expressing opposition to new legislation that raises the women's state pension age: Hill A. At least 1,000 women protest at changes to UK pension age. The Guardian. 10 Oct 2018. Available from: <https://www.theguardian.com/lifeandstyle/2018/oct/10/thousand-women-protest-at-changes-to-uk-pension-age>.

reduce the welfare bill, and improves financial independence during retirement.¹⁹

Behavioural change could also include a renewed investment in human capital through training and education. A well-educated, well-trained and healthy population forms the base of a competitive, productive workforce. Improving the skills and capacity of the workforce as a whole helps to counterbalance productivity losses from a shrinking labour pool, allowing society to better meet the economic demands of its ageing members.²⁰

Policy

Policy changes are a second essential feature of any solutions portfolio. Already, several countries,²¹ including the UK countries,²² have raised the age of retirement and pension eligibility. While life expectancy in the UK has risen by more than a decade since 1950, retirement ages have increased notably less. The state pension age for men and women remained at 65 and 60, respectively, between 1940 and 2010, when the government introduced raising the women's age to be in line with that of men.²³ From December 2018, the age is set to rise gradually for both genders to 66 in 2020 and 67 between 2026 and 2028.²⁴

Raising pension-eligibility ages eases fiscal stress by reducing long-term public expenditures and effectively pushes the clock back in terms of the tightening of the workforce that accompanies population ageing. While this seems a prudent measure to safeguard fiscal sustainability, some critics argue that increasing

¹⁹Thomson P. A silver lining for the UK economy? The intergenerational case for supporting longer working lives. Centre for Ageing Better. 2018. Available from: <https://www.ageing-better.org.uk/sites/default/files/2018-02/Silver-lining-UK-economy-crucial.pdf>.

²⁰Thomson (2018); Ferreira (2016).

²¹These include, for instance, Austria and Germany. See Staubli S, Zweimüller J. Does raising the early retirement age increase employment of older workers? *Journal of Public Economics*. 2013;108:17–32; US Social Security Administration. Office of Retirement and Disability Policy. Social security programs throughout the world: Europe, 2018. SSA Publication No. 13-11801. 2018 Sept. pp. 43–9, 132–41. Available from: <https://www.ssa.gov/policy/docs/progdesc/ssptw/2018-2019/europe/ssptw18europe.pdf>.

²²UK Department for Work and Pensions. State pension age timetable. 2013. [Updated 2014 May 15; cited 2019 Apr 1]. Available from: <https://www.gov.uk/government/publications/state-pension-age-timetable>.

²³House of Commons Work and Pensions Committee. Communication of state pension age changes. Seventh Report of Session 2015–16. 2016 Mar 15. Available from: <https://publications.parliament.uk/pa/cm201516/cmselect/cmworpen/899/899.pdf>.

²⁴UK Department for Work and Pensions (2014).

retirement and pension-eligibility ages may disproportionately affect those of lower socioeconomic standing. Increases in life expectancy are on average lower for those in lower-income groups (especially those who work in manual labour, which is associated with particularly low life expectancies).²⁵ These are the same individuals who are also disproportionately likely to rely more on pension payment support in retirement. Some question whether it is ethical that blue-collar workers should have to wait longer for retirement benefits if physicians and executives live longer.

Another policy option that could help improve the old-age dependency ratio relates to migration. Migration tends to be selective of working-age people, so they can serve as high-octane fuel for spurring the economy and raising revenue to finance pension payments. This idea has led to the notion of replacement migration (which the UN defines as the international migration that a country would need to prevent population decline and population ageing resulting from low fertility and mortality rates). In some circles, this has displaced the earlier notion of replacement fertility (around 2.05 children per woman). Admittedly, however, an enormous influx of migrants would be required to make an appreciable difference in this respect and would be politically controversial.

Combating the effects of population ageing will also require health system policy reforms, especially those that target the prevention and early detection of disease. The UK Prime Minister emphasised this point in a speech in June 2018, stating “[i]f we want not just to cope with an ageing population, but thrive too, we will need a renewed focus on prevention”.²⁶ Policies in this vein could involve: raising taxes on sugar-sweetened beverages, tobacco, and alcohol; promoting the vaccination of older people against the flu, shingles and pneumococcal disease; and increasing incentives and opportunities for physical activity and eating healthy foods. Early detection programmes are also beneficial, such as those offered by on-site clinics, wearable sensors, or digital platforms for seeking health advice. When conditions are caught early, individuals can

²⁵Luy M, Wegner-Siegmundt C, Wiedemann A, Spijker J. Life expectancy by education, income and occupation in Germany: estimations using the longitudinal survival method. *Comparative Population Studies*. 2015;40(4):399–436. Available from: <http://www.comparativepopulationstudies.de/index.php/CPoS/article/viewFile/203/217>.

²⁶Theresa, M. Prime Minister of the United Kingdom. “PM Speech on the NHS.” 18 Jun 2018. Available from: <https://www.gov.uk/government/speeches/pm-speech-on-the-nhs-18-june-2018>.

typically be treated more cheaply with better results. Improved health in the older population creates considerable value for wider society – through both productive market work and nonmarket activities, such as caring for grandchildren, volunteer work, and housework. Many of these policy reforms are strongly complementary. For example, raising the retirement age will not be as effective if older people are not healthy enough to work or to work productively.

Innovation

Innovation should play a prominent role in designing viable solutions. This includes technological innovation, such as robotics that can help fill production demands for manual labour; developing a universal flu vaccine and new vaccines for common hospital-acquired infections such as *Clostridium difficile*; and developing precision medicine, which allows health risks to be identified before disease manifestation and treatments to be customised based on genetic profiles. There is also considerable scope for institutional innovation – for example, the business models of care services such as Home Instead could involve training individuals in their 70s to work as in-home care providers for those in their 80s. Finally, design innovations for long-term care institutions, residential housing, transportation systems, and urban layouts can facilitate independence and continued employment for older people.

Conclusion

The uncharted waters of population ageing pose a set of daunting challenges in the UK and beyond. An unparalleled level of ageing marks new territory for the policymakers, institutions, healthcare providers, and other leaders who must contend with its effects and design plausible solutions. While daunting, however, this new set of challenges is not insurmountable.

Demographic trajectories are not set in stone, nor are their implications for social, health, and economic outcomes. History shows that demographic change has a persistent habit of spurring behavioural changes, as well as technological and institutional innovations and policy reforms, that either accentuate favourable demographics or offset negative ones. While the world population was doubling from three to six billion in 1960–2000, dire predictions were confounded by the fact that global income per capita more than doubled during that time frame, life expectancy increased by more than 15 years, and universal primary school enrolment rates were approached in many countries.

If national and international leaders respond behaviourally, institutionally, and technologically to the new demographic normal, there is little reason to believe society would not have similar success coping with the human, social, political, and economic challenges of population ageing. We need an offensive strategy that approaches these challenges holistically, combining many complementary initiatives. Such a strategy would mean that both the UK and the world at large are poised not just to cope with population ageing but also to create a victory out of our historically unprecedented demographic success.

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Published in August 2019 © ILC-UK 2019

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