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# Preparing for an ageing world

Wealth Management Chief Investment Office

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# An ageing population

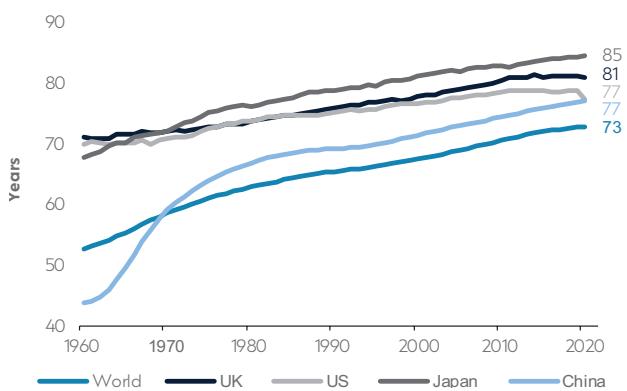
The 15<sup>th</sup> of November 2022 marked a milestone in human history – the world's population was projected to have exceeded 8 billion, merely 12 years after surpassing 7 billion and less than a century after the human race numbered just 2 billion people.

Against this backdrop, one trend that is becoming increasingly apparent is that of an ageing population. Figures from the World Health Organisation have pointed out that by 2030, 1 out of 6 people worldwide is likely to be aged 60 years and above, while those aged 80 years or more is expected to triple from 2020 to 2050.

In this note, we discuss factors that accelerated the rise of an ageing population and highlight implications and opportunities that we observe alongside this trend.

## Life expectancy has increased over the decades

Life expectancy in major regions (1960-2020)



Source: World Bank, Standard Chartered



# Ageing and the drivers of demographics

Lower mortality + Lower fertility = Ageing population

## A lower Mortality rate

“The thirties are the new twenties”

As humans, we are now expected to live longer than ever. With an expected lifetime of 73 years, we are currently living, on average, approximately 20 years longer than in the 1960s. There are several catalysts behind this:

### Advancements in the healthcare system

The global ‘crude death rate’, which measures the total number of deaths divided by the entire population in a given period, has declined sharply to 0.8% today from 1.8% in 1960. Cures have been found for a wider range of diseases, with advancements in medical technologies such as CT scans and MRIs having contributed to improved diagnosis and prevention of chronic diseases. In addition, governments have also been providing subsidies to elderly healthcare services or offering free-of-charge vaccinations, resulting in more timely and effective medical treatments substantially extended lifespans.

### A shift towards healthier lifestyles

Increased health consciousness has underpinned the shift towards healthier lifestyles habits, as more people seek to improve their physical and mental well-being. In particular, since the pandemic there has been growing appetite for products and services that can support a healthier and more active lifestyle. In Hong Kong, for instance, a survey from Manulife indicated that 35% of respondents found ways to be more physically healthy since COVID-19, and 31% started to keep track of their mental health status as well.

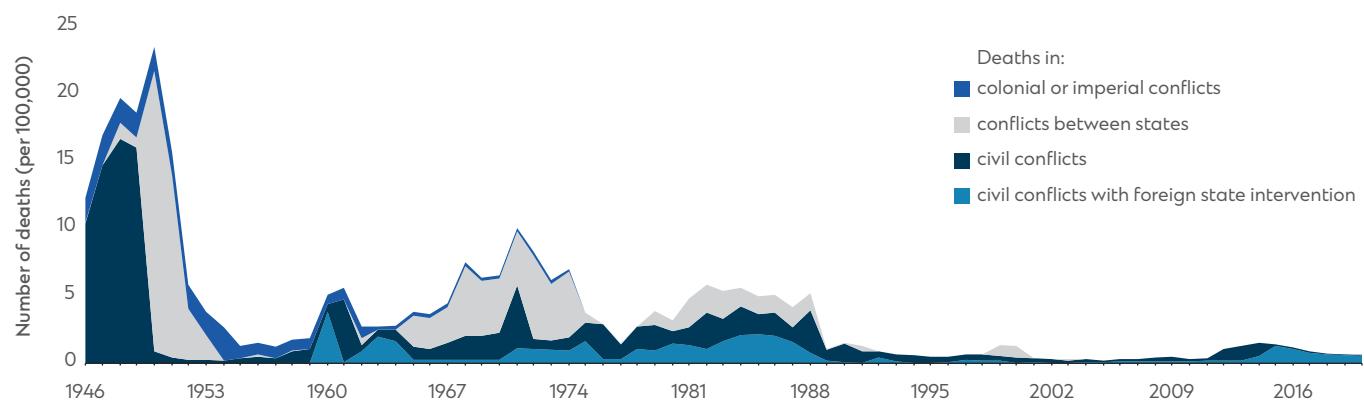


## A more supportive living environment

The availability of secure living habitats and public facilities have enhanced the safety of human beings. Warfare-related deaths have fallen drastically from 23.5 deaths in state-based conflict per 100,000 people in 1950 to 0.63 in 2020, having a significant impact in lowering the overall mortality rate.

### Warfare-related deaths have fallen significantly since the 1950s

Deaths in state-based conflicts (1946-2020)



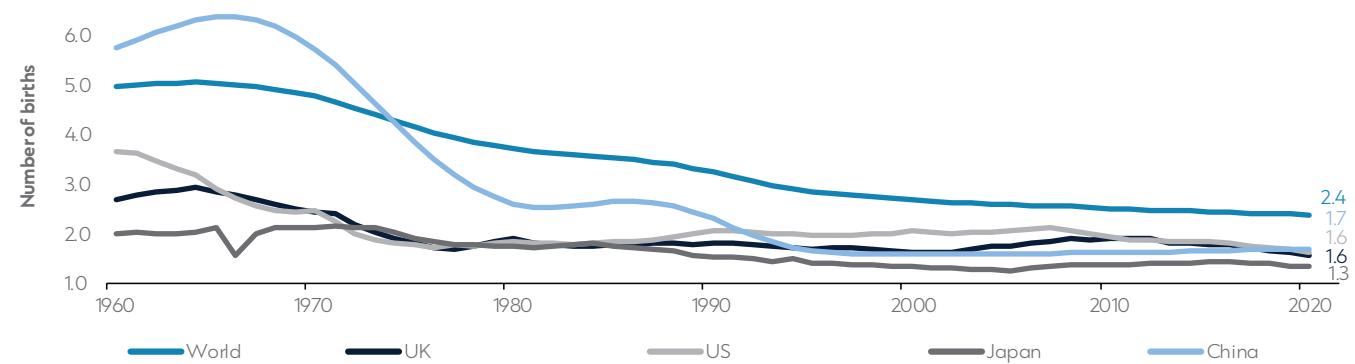
Source: World Bank, Standard Chartered

## Lower fertility rate

While the United Nations projects that the world's population will climb to 10.4 billion by 2100\*, the fertility rate has declined significantly over the previous decades, from an average of 5 birth per woman in 1960, to barely 2.4 births today. In China, for example, there are over 600,000 DINK (Dual-income, no kids) families, mostly located in the first- and second-tier cities. Such behaviour can be explained by factors including higher literacy and increased workforce participation of females, and the rising cost of raising children. The average cost of raising a child until the age of 18 in China was CNY 485,000 (USD 69,493 at the time of writing) in 2019, 6.9 times China's GDP per capita, exceeding many developed countries like the US, Germany and Japan. In addition, the decline in crude death rate (-52% from 1960 to 2020) has outpaced birthrate deceleration (-38% from 1960 to 2020), driving a rise in elderly population.

### Fertility rate has significantly retreated across major regions since 1960

Fertility rate from 1960 to 2020



Source: World Bank, Standard Chartered

\*This view of the world is increasingly coming under scrutiny, with some researchers suggesting peak population at around 9 billion somewhere between 2040 and 2060. Naturally, on this view, the ageing population will be even more severe. Source: Empty Planet Bricker and Ibbetson, 2019

# Implications

## Social perspective

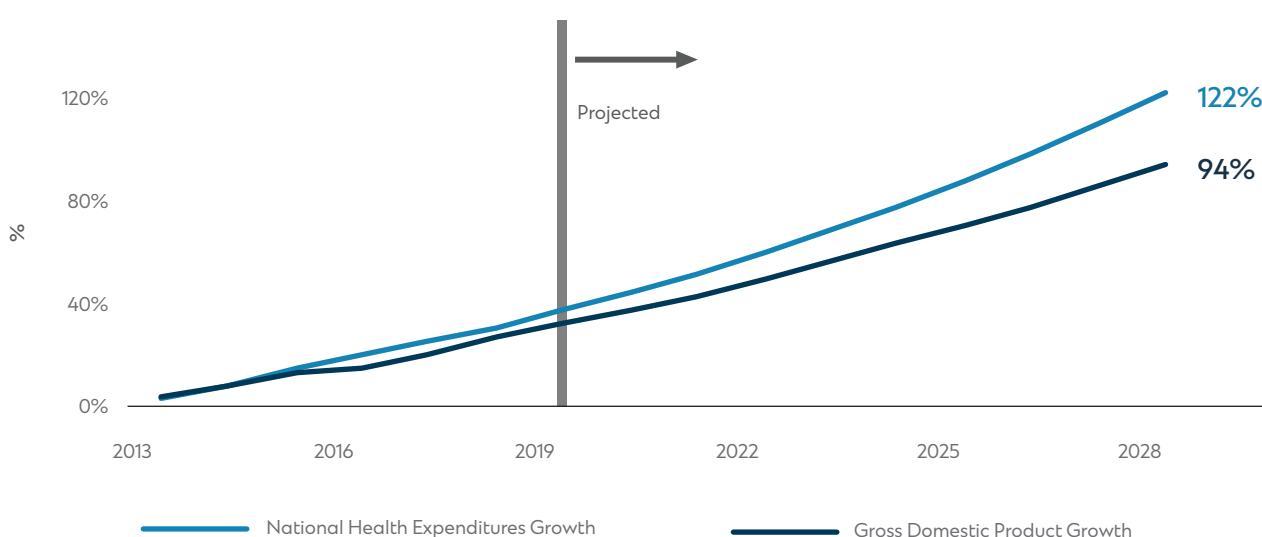
A rising proportion of elderly in the society can lead to a shift in the age structure of a population, with potentially fewer people in the working age group, lowering labour participation. This is likely to result in potential labour shortages, placing upward pressure on wages and potentially higher inflation. Meanwhile, there could also be a greater use of technology to substitute the human workforce to combat slowing productivity.

## Economic perspective

Longer life expectancy and a rise in the share of elderly population is likely to pressure economic growth and place increased pressure on a country's healthcare system. As the population ages, there will be fewer workers in the economy to support a growing number of retirees, negatively impact growth. Additionally, an ageing population can also lead to increased healthcare costs, diverting precious economic resources to the healthcare sector instead of other productive uses. In the US, for example, spending on major healthcare programmes is outgrowing US GDP growth, an unsustainable long-term trend.

### Healthcare spending expected to outpace GDP growth in the US, an unsustainable trend

Projected National Health Expenditure and GDP growth



Source: Centers for Medicare & Medicaid Services, Office of the Actuary; U.S. Department of Commerce, Bureau of Economic Analysis; and U.S. Bureau of the Census, Standard Chartered

# Potential opportunities

While there are certainly challenges associated with an ageing population, there are also potential opportunities.

## Changes in consumption trends

### The 'silver economy'

An ageing population can create new markets and businesses focused on the needs of older individuals. Older adults were projected to have spent USD 15tn in 2020 and are expected to generate over one-third of global consumption growth in the coming years. A McKinsey survey further pointed out that health-related products and services take up the largest proportion of wellness spending across countries, with consumers generally expecting to increase spending in this category. For instance, consumption of anti-ageing products and supplements, or cosmetic treatments, are likely to promote self-care and mitigate both physical and mental ageing. Enrolment to fitness classes and social activities to improve emotional and mental agility are also amongst the emerging consumption trends.

## Increased life expectancy

### The rise of biotechnology

Biotechnology refers to the use of biological processes and technology to develop new products, methods and organisms to improve human health and society. Over the years, biotechnological innovations have shaped the contemporary healthcare environment and have been widely adopted in therapeutics to prevent and treat diseases. One recent example would be the success of mRNA vaccines (a cutting-edge technology used to develop immunity to viruses). Other instances of biotech are Enbrel and Humira to treat rheumatoid arthritis, or Lantus to cure diabetes. The global biotechnology market was estimated at USD 1,024bn in 2021 and is expected to grow at a CAGR of 13.9% from 2022 to 2030.



# Rising healthcare system productivity

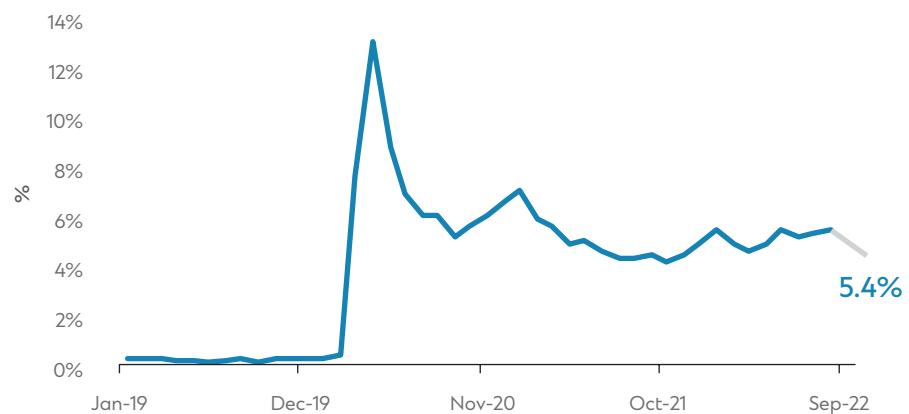
## Growing healthcare innovations

Chronic disease is one of the major causes of mortality among the elderly. Apart from regular medical check-ups, the tracking of a patient's vitals can also facilitate a more effective diagnosis and treatment process.

This need has stimulated a rise in healthcare innovation. For example, healthcare IT infrastructure has been widely developed and adopted to provide healthcare professionals with a comprehensive view of their patient's medical records. Innovations such as wearable med-tech devices and applications of technologies such as augmented reality (AR) and artificial intelligence (AI) are increasingly used to track elderly health conditions outside hospitals and automatically alert patients or their emergency contacts when abnormalities are detected. Apart from medical devices, the usage of telehealth also surged during the COVID-19 pandemic as patients sought ways to access healthcare services without any physical contact. The number of telehealth claims in the US have risen significantly from 0.2% range pre-COVID to 5.4% in August 2022.

Virtual care claims have stabilised to around 5% after the initial spike since pandemic

Telehealth claims as a percentage of all medical claims  
(Jan 2019-Aug 2022)



Source: FairHealth, Standard Chartered

Global venture capital funding for digital health companies was up by 138% in the first half of 2021 and hit USD 15bn, the bulk of which went to telehealth investments. As consumer and providers' perceptions over telehealth hugely improved through the pandemic, virtual medical consultation is also expected to become increasingly prevalent in the future.

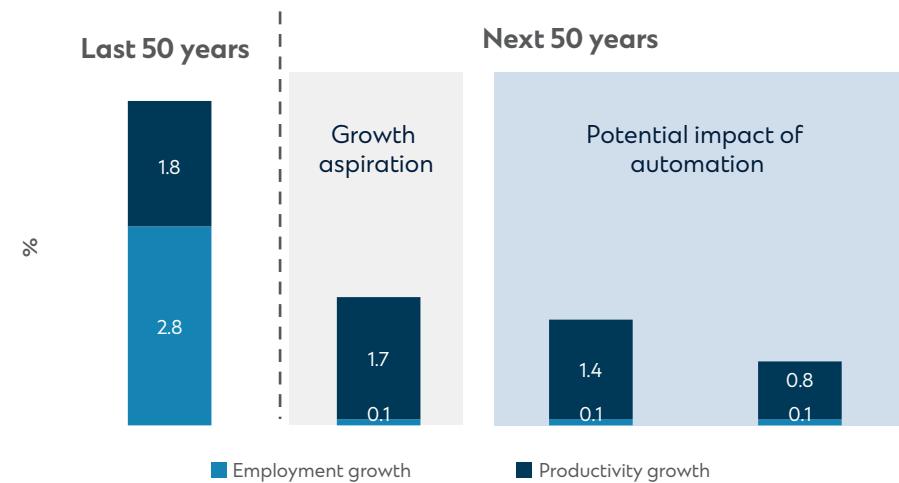
## Substitution of labour forces

### Robotisation and rising automation

The rising adoption of robots and automated machines to substitute repetitive tasks previously completed by human workers has been helpful to remedy the decline in productivity resulting from an ageing population. For instance, with over 15% of its total population aged 75 or above, Japan is one of the largest industrial robot manufacturers in the world. It is also a frontrunner in the adoption of robots in everyday life to facilitate social engagement among elderly, lower operational costs by corporations in order to maintain economic growth. On top of industrial robots that assist businesses throughout the manufacturing process, automation can also be applied to areas such as restaurants, medical training, managing household tasks or even assisted living. It is estimated that over the next 50 years, automation can provide 0.8% to 1.4% boost to productivity annually.

Automation is expected to boost global productivity in the coming 50 years

Productivity and employment growth projections



Source: McKinsey, Standard Chartered





# Summary

An ageing population is set to alter the current demographic structure in the coming decades. While this will raise several issues from a social and economic perspective, it will also create opportunities, driving the growth of industries that caters to the needs and preferences of an older population. Looking forward, we expect government and communities to increasingly plan and address the potential impacts from an ageing population, benefitting areas including the silver economy, biotech and automation, to maintain a vibrant and dynamic society.

## Sources:

Adam, D. (2022, November 15). The world population just hit 8 billion, and here's how it will continue to grow. *Scientific American*. Retrieved from <https://www.scientificamerican.com/article/the-world-population-just-hit-8-billion-and-heres-how-it-will-continue-to-grow/>

Allinson, M. (2022, May 1). 5 ways in which robots are used in everyday lives. Retrieved from [https://roboticsandautomationnews.com/2022/05/01/5-ways-in-which-robots-are-used-in-everyday-lives/50732/](https://roboticsandautomationnews.com/2022/05/01/5-ways-in-which-robots-are-used-in-everyday-lives/)

Arensberg, M.B. Population aging: opportunity for business expansion, an invitational paper presented at the Asia-Pacific Economic Cooperation (APEC) International Workshop on Adaptation to Population Aging Issues, July 17, 2017, Ha Noi, Viet Nam. *J Health Popul Nutr* 37, 7 (2018). <https://doi.org/10.1186/s41043-018-0138-0>

Barney, N. (2022, November). What is biotechnology? definition, types and applications | techtarget. Retrieved from <https://www.techtarget.com/whatis/definition/biotechnology>

Biotechnology Market Size & Growth Trends report, 2030. (n.d.). Retrieved from <https://www.grandviewresearch.com/industry-analysis/biotechnology-market>

Callaghan, S., Lösch, M., Pione, A., & Teichner, W. (2022, January 27). Feeling good: The future of the \$1.5 Trillion wellness market. *McKinsey & Company*. Retrieved from <https://www.mckinsey.com/industries/consumer-packaged-goods/our-insights/feeling-good-the-future-of-the-1-5-trillion-wellness-market>

Covid-19 boosts health consciousness | manulife HK. (2020, August 5). Retrieved from <https://www.manulife.com.hk/en/individual/about/newsroom/manulife-asia-care-survey-20200805.html>

Death rate, crude (per 1,000 people) | Data - World Bank. Death rate, crude (per 1,000 people). (n.d.). Retrieved from <https://data.worldbank.org/indicator/SP.DYN.CDRT.IN>

Elderly populations: Global trends in the Healthy Aging Market. (2022, August 16). Retrieved from <https://www.news-medical.net/news/20220816/Elderly-populations-Global-trends-in-the-healthy-aging-market.aspx>

Federal health care spending | U.S. gao. (n.d.). Retrieved from <https://www.gao.gov/federal-health-care-spending>

Fertility rate, total (births per woman) | Data - World Bank. Fertility rate, total (births per woman). (n.d.). Retrieved from <https://data.worldbank.org/indicator/SP.DYN.TFR.TIN>

Landi, H. (2021, July 19). Digital health dollars hit \$15B high driven by telehealth investment in 2021. Retrieved from <https://www.fiercehealthcare.com/digital-health/telehealth-funding-soars-to-4-2b-record-shattering-2021>

Life expectancy at birth, total (years) | Data - World Bank. (n.d.). Retrieved from <https://data.worldbank.org/indicator/SP.DYN.LE00.IN>

Manyika, J., Chui, M., Miremadi, M., Bughin, J., George, K., Willmott, P., & Dewhurst, M. (2017, January). A future that works: Automation, employment, and Productivity. Retrieved from <https://www.mckinsey.com/featured-insights/digital-disruption/harnessing-automation-for-a-future-that-works/de-de>

Max Roser, Joe Hasell, Bastian Herre and Bobbie Macdonald (2016) - "War and Peace". Published online at OurWorldInData.org. Retrieved from: '<https://ourworldindata.org/war-and-peace>' [Online Resource]

Monthly Telehealth Regional tracker | fair health. (n.d.). Retrieved from <https://www.fairhealth.org/states-by-the-numbers/telehealth>

Shu, B. (2022). The Dink, public judgement and stigma: The childbearing issue in the Chinese context. *Advances in Social Science, Education and Humanities Research*. <https://doi.org/10.2991/assehr.k.211220.186>

Understanding how covid-19 vaccines work | CDC. Understanding How COVID-19 Vaccines Work. (2022, September 16). Retrieved from <https://www.cdc.gov/coronavirus/2019-ncov/vaccines/different-vaccines/how-they-work.html>

World Health Organization. (2022, October 1). Ageing and health. World Health Organization. Retrieved from <https://www.who.int/news-room/fact-sheets/detail/ageing-and-health>

Zhang, H. (2022, February 22). Cost of raising a child until age 18 in China 6.9 times ... - global times. Retrieved from <https://www.globaltimes.cn/page/202202/1252843.shtml>

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