United Nations | Department of Economic and Social Affairs

World Population Ageing 2019

ST/ESA/SER.A/444

Department of Economic and Social Affairs

Population Division

World Population Ageing 2019

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The Population Division of the Department of Economic and Social Affairs provides the international community with timely and accessible population data and analysis of population trends and development outcomes for all countries and areas of the world. To this end, the Division undertakes regular studies of population size and characteristics and of all three components of population change (fertility, mortality and migration). Founded in 1946, the Population Division provides substantive support on population and development issues to the United Nations General Assembly, the Economic and Social Council and the Commission on Population and Development. It also leads or participates in various interagency coordination mechanisms of the United Nations system. The work of the Division also contributes to strengthening the capacity of Member States to monitor population trends and to address current and emerging population issues.

Notes

The designations employed in this report and the material presented in it do not imply the expression of any opinions whatsoever on the part of the Secretariat of the United Nations concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries.

The term “country” as used in this report also refers, as appropriate, to territories or areas.

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PREFACE

In the area of population ageing, the Population Division of the Department of Economic and Social Affairs of the United Nations Secretariat prepares national, regional and global estimates and projections of the older population, monitors levels and trends in the distribution of population by age and analyses information on the relationship between population ageing and sustainable development. Periodically, the Division also organizes expert group meetings on various aspects of population ageing.

This report is the seventh in the series entitled *World Population Ageing*. The first report was released in 2002 in conjunction with the Second World Assembly on Ageing convened in the same year in Vienna, Austria. The present report provides a description of global trends in population ageing and includes an in-depth analysis of new measures that offer an alternative perspective on changes in the population age structure. It also presents measures to track trends in economic dependency as a result of changes in the population age distribution.

This report was prepared by a team led by Karoline Schmid, including Mun Sim Lai, Yumiko Kamiya and two interns, Heta Pöyliö and Zhangjun Zhou. Bela Hovy, Gavin Jones, Jorge Bravo and John Wilmoth provided guidance and useful comments on the draft report. Guangyu Zhang, Papoute B. Ouedraogo and Neena Koshy assisted in the manuscript's review, formatting and preparation for publication.

The present report has been issued without formal editing. Responsibility for *World Population Ageing 2019* rests with the Population Division.

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The following symbols have been used in the tables throughout this report:

A minus sign (-) before a figure indicates a decrease or negative number.

A full stop (.) is used to indicate decimals.

Use of a hyphen (-) between years, for example, 1995-2000, signifies the full period involved, from 1 July of the first year to 1 July of the second year.

An em dash (—) indicates that the magnitude is not zero, but less than half of the unit employed (i.e. is rounded to 0, when in fact it is not 0)

A 0 or 0.0 indicates that the magnitude is zero

Two dots (..) indicate that data are not available or are not reported separately

Numbers and percentages in this table do not necessarily add to totals because of rounding.

References to regions, subregions, development groups, countries and areas:

The designations employed in this publication and the material presented in it do not imply the expression of any opinion whatsoever on the part of the Secretariat of the United Nations concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. The term "country" as used in this publication also refers, as appropriate, to territories or areas.

In this report, data for countries and areas are often aggregated in six continental regions: Africa, Asia, Europe, Latin America and the Caribbean, Northern America, and Oceania. Further information on continental regions is available from https://unstats.un.org/unsd/methodology/m49/. Countries and areas have also been grouped into geographic regions based on the classification being used to track progress towards the Sustainable Development Goals of the United Nations (see: https://unstats.un.org/sdgs/indicators/regional-groups/).

The designation of "more developed" and "less developed", or "developed" and "developing", is intended for statistical purposes and does not express a judgment about the stage in the development process reached by a particular country or area. More developed regions comprise all countries and areas of Europe and Northern America, plus Australia, New Zealand and Japan. Less developed regions comprise all countries and areas of Africa, Asia (excluding Japan), Latin America and the Caribbean, and Oceania (excluding Australia and New Zealand).

The group of least developed countries (LDCs) includes 47 countries, located in sub-Saharan Africa (32), Northern Africa and Western Asia (2), Central and Southern Asia (4), Eastern and South-Eastern Asia (4), Latin America and the Caribbean (1), and Oceania (4). Further information is available at http://unohrlls.org/about-ldcs/.

The group of Landlocked Developing Countries (LLDCs) includes 32 countries or territories, located in sub-Saharan Africa (16), Northern Africa and Western Asia (2), Central and Southern Asia (8), Eastern and South-Eastern Asia (2), Latin America and the Caribbean (2), and Europe and Northern America (2). Further information is available at http://unohrlls.org/about-lldcs/.

The group of Small Island Developing States (SIDS) includes 58 countries or territories, located in the Caribbean (29), the Pacific (20), and the Atlantic, Indian Ocean, Mediterranean and South China Sea (AIMS) (9). Further information is available at http://unohrlls.org/about-sids/.

The classification of countries and areas by income level is based on gross national income (GNI) per capita as reported by the World Bank (June 2018). These income groups are not available for all countries and areas.

* For country notes, please refer to: https://population.un.org/wpp/Download/Metadata/Documentation

List of Abbreviations

ICPD	International Conference on Population and Development
NTAS	National Transfer Accounts
OADR	Old-age dependency ratio
POADR	Prospective old-age dependency ratio
SDG	Sustainable Development Goal
UNFPA	United Nations Population Fund

INTRODUCTION

Population ageing is a human success story, reflecting the advancement of public health, medicine, and economic and social development, and their contribution to the control of disease, prevention of injury, and reduction in the risk of premature death. The extension of human longevity and subsequent reduction in levels of fertility lead inevitably to a shift in the population age distribution from younger to older ages. Population ageing is one of the four "mega-trends" that characterize the global population of today—population growth, population ageing, urbanization and international migration. Each of these mega-trends will continue to have substantial and lasting impacts on sustainable development in the decades to come.

The increase in human longevity associated with the demographic transition was the engine of global population growth. The subsequent decline in fertility, however, was the trigger that led to a continuously growing share of older persons in the global population. Preparing for the economic and social shifts associated with an ageing population is essential to ensure progress towards the achievement of the Sustainable Development Goals (SDGs) of the 2030 Agenda for Sustainable Development. Trends in population ageing are particularly relevant for Goals on eradicating poverty (SDG 1), ensuring healthy lives and well-being at all ages (SDG 3), promoting gender equality (SDG 5) and full and productive employment and decent work for all (SDG 8), reducing inequalities between and within countries (SDG 10), and making cities and human settlements inclusive, safe, resilient and sustainable (SDG 11).

To describe changes in the population age structure, demographers use various measures to describe and compare the relative sizes of different age groups. The simplest and most common measure is the percentage of persons aged 65 years or over. Another measure often used in discussing the challenges of social protection associated with population ageing is the old-age dependency ratio, which equals the number of persons aged 65 years or over divided by the number at ages from 20 to 64 years. The ratio is often used as a proxy for the social and economic dependency of the older population. However, given the diversity among older persons concerning functional capacity and economic activity, and the fact that not all persons in the traditional working ages are economically active, researchers have proposed alternative measures to track changes in dependency in the context of population ageing. Some of these alternative measures rely on data that are available at the global level or for a large number of countries.

This report is organized in four parts. The introduction presents an overview of the report as well as a brief summary of its main findings. The first chapter discusses key global and regional trends and dynamics of population ageing. The next chapter examines changes over time in population age structures and their impact on intergenerational support systems using both traditional and alternative measures of population ageing, including (1) the conventional old-age dependency ratio based on chronological age, (2) an alternative "prospective" measure that adjusts the threshold of old age based on years of remaining life expectancy, and (3) a measure of economic dependency that incorporates information about age patterns of consumption and production. The third chapter examines how the consumption of older persons has been financed in various countries and regions, including through public transfers, private transfers, assets and labour income, and how this may change in the future. The report concludes with evidence-based recommendations to assist policy makers in addressing both the challenges and the opportunities that population ageing presents for implementing the 2030 Agenda for Sustainable Development.

A. Global and regional trends in population ageing

Population ageing is a global phenomenon. Virtually every country in the world is experiencing growth in both the size and the proportion of older persons in the population. In 2019, there were 703 million persons aged 65 years or over in the global population. This number is projected to double to 1.5 billion in 2050. Globally, the share of the population aged 65 years or over increased from 6 per cent in 1990 to 9 per cent in 2019. That proportion is projected to rise further to 16 per cent in 2050, when it is expected that one in six people worldwide will be aged 65 years or over.

Globally, the number of persons aged 80 years or older nearly tripled between 1990 and 2019, growing from 54 million to 143 million; it is projected to triple again between 2019 and 2050 to reach 426 million. Between 1990 and 2019, the number of persons aged 80 or over doubled in all regions except Europe and Northern America and tripled in four of eight regions. Between 2019 and 2050, the number of persons aged 80 years or over is projected to show the largest percentage increases in Eastern and South-Eastern Asia and in Northern Africa and Western Asia.

The pace of population ageing has been fastest in Eastern and South-Eastern Asia and in Latin America and the Caribbean. The percentage of the population aged 65 years or over has almost doubled in Eastern and South-Eastern Asia, rising from 6 per cent in 1990 to 11 per cent in 2019, and in Latin America and the Caribbean, increasing from 5 per cent in 1990 to 9 per cent in 2019. Between 2019 and 2050, the share of older persons is projected at least to double in four regions: Northern Africa and Western Asia, Central and Southern Asia, Latin America and the Caribbean, and Eastern and South-Eastern Asia.

At the global level, life expectancy at birth has reached 72.3 years, with women on average living five years longer than men — 74.7 years and 69.9 years, respectively. The gender gap in longevity is largest in Latin America and the Caribbean, with a difference of 6.5 years between women and men, and smallest in Central and South-Eastern Asia, with a gap of 2.7 years.

Worldwide, a person who reaches age 65 years in 2015-2020 can expect to live, on average, an additional 17 years. By 2045-2050, that figure is expected to increase to 19 years. The highest life expectancy at age 65 is currently experienced by older persons in Australia and New Zealand (21 years) followed by Europe and Northern America (19 years). Between 2015-2020 and 2045-2050, life expectancy at age 65 is projected to increase in all regions. Although the survival of men is expected to improve, it is likely that women will continue to outlive men on average.

As a result of the gender gap in longevity, older women currently outnumber older men across the age range — in particular, for those aged 80 years or older. Globally in 2019, there were 81 men for every 100 women aged 65 years or older, yet only 63 men for every 100 women aged 80 years or older. With the sex difference in longevity expected to narrow in future years, in 2050 it is projected that there will be 85 men per 100 women aged 65 years or over, and 71 men per 100 women at ages 80 and above.

B. Measures of population ageing

Population ageing is driven by the reductions in fertility and the improvements in survival associated with economic and social development and with advances in public health and medicine. These advances have led to shifts in the age structure of populations as successive cohorts live longer and have fewer children. The measures and indicators commonly used by the United Nations and other researchers to compare the sizes of different age groups are based on people's chronological age, typically defining older persons as those aged 60 or 65 years or

over. To broaden our understanding of population ageing, alternative concepts and measures taking account of socio-economic as well as health-related factors have been developed.

According to the conventional measures, including the old-age dependency ratio (OADR), population ageing is projected to intensify in almost all countries. In 2019, OADRs were highest in Europe and Northern America, with 30 persons aged 65 or older per 100 persons aged 20-64 years (the "working ages"), followed by Australia and New Zealand, with 27 older persons per 100 persons of working age. This ratio is projected to rise considerably, reaching 49 per 100 in Europe and Northern America and 42 per 100 in Australia and New Zealand in 2050. In contrast, in 2019 the OADR was relatively low in Oceania and sub-Saharan Africa, with 7 and 9 older persons per 100 working-age persons, respectively. The ratio is expected to increase gradually, reaching 14 per 100 in Oceania and 9 per 100 in sub-Saharan Africa in 2050. Although the 10 countries or areas with the highest old-age dependency ratios are predominantly European at present, more Asian countries and areas will likely be part of this group in 2050.

Some of the newer measures, such as the prospective old-age dependency ratio (POADR) based on remaining life expectancy, suggest a slower increase in old-age dependency for many countries compared to the traditional old-age dependency ratio. At the global level, the prospective old-age dependency ratio has declined slightly from 13 per 100 in 1990 to 12 per 100 in 2019, but it is projected to rise to 17 per 100 by 2050. The fastest increases will occur in Eastern and South-Eastern Asia, where the POADR is projected to increase from 12 per 100 in 2019 to 25 per 100 in 2050. The slowest increments will be experienced in sub-Saharan Africa, where the POADR in 2050 is expected to remain close to its value of around 10 per 100 in 2019. In 2019, 9 out of the 10 countries with the largest prospective old-age dependency ratios were in Europe. Among the 10 countries or areas with the largest POADR in 2050, seven will be in Europe, one will be in Eastern and South-Eastern Asia, and two in Latin America and the Caribbean.

Measures that take into account age patterns of economic consumption and production indicate that there will be considerable increases in old-age dependency. According to the latest information from the National Transfer Accounts project, population ageing will bring a continuing increase in the number of effective consumers at ages 65 and above per 100 effective workers (at all ages). Globally, it is expected that this ratio will rise from 20 per 100 in 2019 to 33 per 100 in 2050. In 2019, two regions — Europe and Northern America, and Australia and New Zealand — had the highest economic old-age dependency ratios, with values of 43 and 36 per 100, respectively. Although sub-Saharan Africa and Oceania currently have the lowest economic OADRs, at 7 and 9 per 100, respectively, these ratios are projected to increase to around 10 and 15 per 100, respectively, in 2050.

C. How does population ageing affect assets, transfers and work?

National Transfer Accounts (NTAs) provide a framework for analysing how the consumption of older persons is financed through (1) public programmes providing pensions, health care and other forms of social protection; (2) transfers from family members or other private sources; (3) their own assets and accumulated wealth; and (4) their labour income.

The most recent data available show that older persons in Europe and Latin America rely heavily on public transfers, while own assets and accumulated wealth are the primary source of support for older persons in Southern Asia and South-Eastern Asia. In many high-income countries, consumption at older ages is mainly financed from public transfers and own assets. While labour-force participation declines at older ages, labour income is an important third or fourth source that funds between 15 and 25 per cent of consumption at older ages in all regions except Europe, where its contribution is considerably less.

Looking ahead, recent research shows that population ageing will put increased financial pressure on old-age support systems. In countries where public transfers are high, including many in Europe and Latin America, population ageing will increase the fiscal pressure on public transfer systems, especially if current patterns of taxation and benefits remain unchanged. In countries where public transfers are relatively low, such as in many countries of Southern Asia and South-Eastern Asia, individuals and families are under pressure to find means of financing consumption at older ages.

D. Policy implications for achieving the Sustainable Development Goals

Progress toward the achievement of the SDG is closely linked to demographic trends. Countries and areas throughout the world have reached different stages of population ageing. Forward-looking policies and programmes taking account of current and future population dynamics are needed to attain sustainable development as articulated in the 2030 Agenda for Sustainable Development, and to fulfil the pledge that no one will be left behind.

To maximize the benefits and manage the risks associated with population ageing, governments should support continuing and lifelong education and health care for all; encourage savings behaviour and healthy lifestyles throughout the life course; promote employment among women, older persons and others traditionally excluded from the formal labour force, including through a gradual increase in the official retirement age; and support family-friendly policies to facilitate work-life balance and increased gender equality in both public and private life. Further, it is important to establish social protection programmes that can be sustained over the long term to prevent poverty, reduce inequality and promote social inclusion among older persons.

I. GLOBAL AND REGIONAL TRENDS IN POPULATION AGEING

Older populations are growing worldwide in both absolute and relative terms

Globally, there were 703 million persons aged 65 or over in 2019.[1] The region of Eastern and South-Eastern Asia was home to the largest number of older persons (261 million), followed by Europe and Northern America (over 200 million) (table I.1).

Over the next three decades, the number of older persons worldwide is projected to more than double, reaching more than 1.5 billion persons in 2050. All regions will see an increase in the size of the older population between 2019 and 2050. The largest increase (312 million) is projected to occur in Eastern and South-Eastern Asia, growing from 261 million in 2019 to 573 million in 2050. The fastest increase in the number of older persons is expected in Northern Africa and Western Asia, rising from 29 million in 2019 to 96 million in 2050 (an increase of 226 per cent). The second fastest increase is projected for sub-Saharan Africa, where the population aged 65 or over could grow from 32 million in 2019 to 101 million in 2050 (218 per cent). By contrast, the increase is expected to be relatively small in Australia and New Zealand (84 per cent) and in Europe and Northern America (48 per cent), regions where the population is already significantly older than in other parts of the world.

TABLE I.1. NUMBER OF PERSONS AGED 65 YEARS OR OVER, BY REGION, 2019 AND 2050

Region	*Number of persons aged 65 or over in 2019 (millions)*	*Number of persons aged 65 or over in 2050 (millions)*	*Percentage change between 2019 and 2050*
World	**702.9**	**1 548.9**	**120**
Sub-Saharan Africa	31.9	101.4	218
Northern Africa and Western Asia	29.4	95.8	226
Central and Southern Asia	119.0	328.1	176
Eastern and South-Eastern Asia	260.6	572.5	120
Latin America and the Caribbean	56.4	144.6	156
Australia and New Zealand	4.8	8.8	84
Oceania excluding Australia and New Zealand	0.5	1.5	190
Europe and Northern America	200.4	296.2	48

Source: United Nations Department of Economic and Social Affairs, Population Division (2019). *World Population Prospects 2019.*

Among development groups, less developed countries excluding the least developed countries will be home to more than two-thirds of the world's older population (1.1 billion) in 2050. Yet the fastest increase is projected to take place in the least developed countries, where the number of persons aged 65 or over could rise from 37 million in 2019 to 120 million in 2050 (225 per cent).

Rapid global increase in the number of persons aged 80 years or over

The number of people worldwide who are aged 80 years or over is growing faster than the number aged 60 years or over. Projections indicate that the number of persons aged 80 or over will increase almost threefold between 2019 and 2050, rising from 143 million to 426 million (table I.2).

[1] This publication defines "older persons" as persons aged 65 years or over.

TABLE I.2. NUMBER OF PERSONS AGED 80 YEARS OR OVER, BY REGION, 2019 AND 2050

Region	Number of persons aged 80 or over (millions)		Change (%)
	2019	2050	2019-2050
World	**143.1**	**426.4**	**197.9**
Sub-Saharan Africa	3.7	12.4	238.1
Northern Africa and Western Asia	5.2	20.3	291.0
Central and Southern Asia	18.5	62.6	239.0
Eastern and South-Eastern Asia	48.6	177.0	264.1
Latin America and the Caribbean	12.0	41.4	245.2
Australia and New Zealand	1.2	3.3	168.4
Oceania, excluding Australia and New Zealand	0.1	0.2	269.1
Europe and Northern America	53.9	109.1	102.6

Source: United Nations, Department of Economic and Social Affairs, Population Division (2019). *World Population Prospects 2019*.

All regions have experienced a rapid increase of population in the oldest age groups. In 2019, the largest numbers of persons aged 80 or older were found in Europe and Northern America (53.9 million) and in Eastern and South-Eastern Asia (48.6 million). By 2050, more than half of the population at ages 80 years and above will live in Eastern and South-Eastern Asia (177 million), followed by Europe and Northern America (109 million.). The largest increments in the population at ages 80 and above – in all cases over 250 per cent – are projected for Northern Africa and Western Asia, for Oceania and for Eastern and South-Eastern Asia.

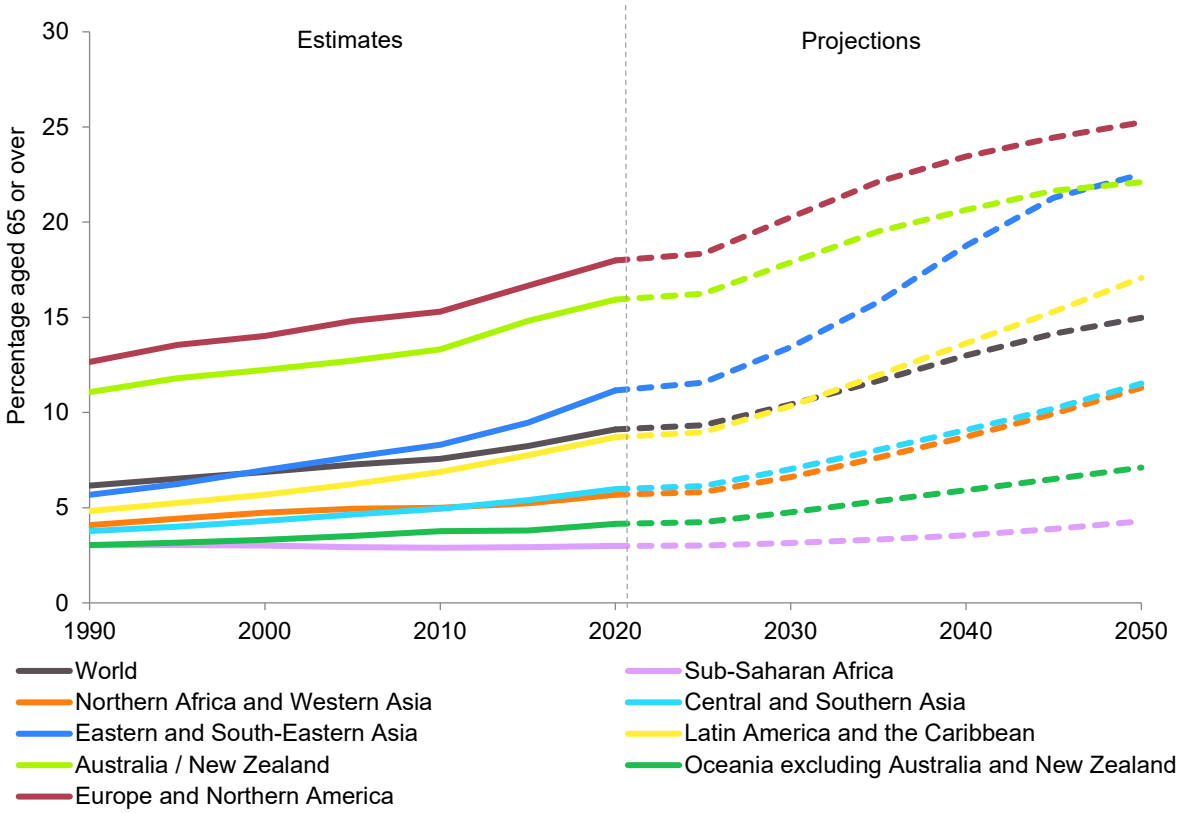
Older population as a percentage of the total continues to increase

Not only has the absolute number of older persons increased globally, but also the share of older persons in the total population has increased and is projected to continue to grow in all regions. The percentage of persons aged 65 or over worldwide has grown from 6 per cent in 1990 to 9 per cent in 2019 and is projected to increase further to 16 per cent in 2050 (figure I.1).

Although the number of persons aged 65 or over in sub-Saharan Africa will triple over the next 30 years, it will remain relatively small as a share of the total population; sub-Saharan Africa is still relatively young, with close to half of its population under age 20. The share of older persons in the population of sub-Saharan Africa has remained stable since 1990 (around 3 per cent) and is expected to see only small increments between now and 2050 (rising to 5 per cent of the total).

Some regions, including Australia and New Zealand, Eastern and South-Eastern Asia, and Europe and Northern America, have seen rapid increases in the proportion of older persons in the total population over the past 30 years and can expect to see this share continue to increase until 2050. The increase will be particularly rapid in Eastern and South-Eastern Asia. Although other regions have experienced modest increments in the share of population at ages 65 and older since 1990, it is expected that the share of older persons in those regions will at least double by 2050.

Figure I.1. Share of total population aged 65 years or over, by region, 1990-2050

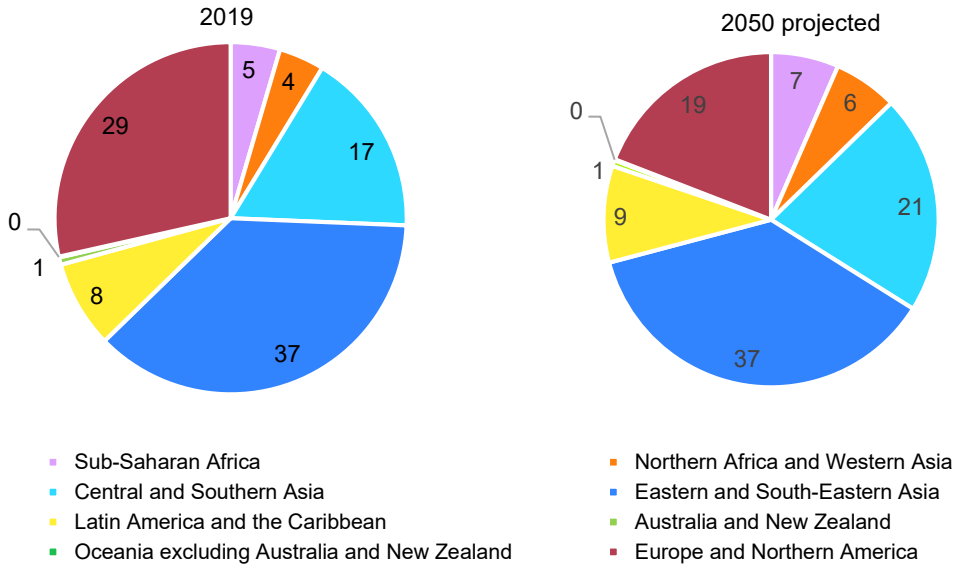


Source: United Nations Department of Economic and Social Affairs, Population Division (2019). *World Population Prospects 2019*.

More than one in three older persons live in Eastern and South-Eastern Asia

The region of Eastern and South-Eastern Asia was home to the largest share (37 per cent) of the world's older population in 2019 and is expected to remain in that position through 2050 (figure I.2). The second largest share of older persons in 2019 lived in Europe and Northern America (28.5 per cent), but this percentage is expected to shrink to 19 per cent in 2050. The region of Central and Southern Asia hosted one sixth of the global population of older persons (17 per cent) in 2019, a figure that is projected to increase to around one fifth (21 per cent) in 2050. The regions of sub-Saharan Africa and of Northern Africa and Western Asia will likely see a further increase in the share of older persons between 2019 and 2050, rising from 5 to 7 per cent, and from 4 to 6 per cent, respectively.

Figure I.2. Global distribution of population aged 65 years or over by region, 2019 and 2050 (percentage)



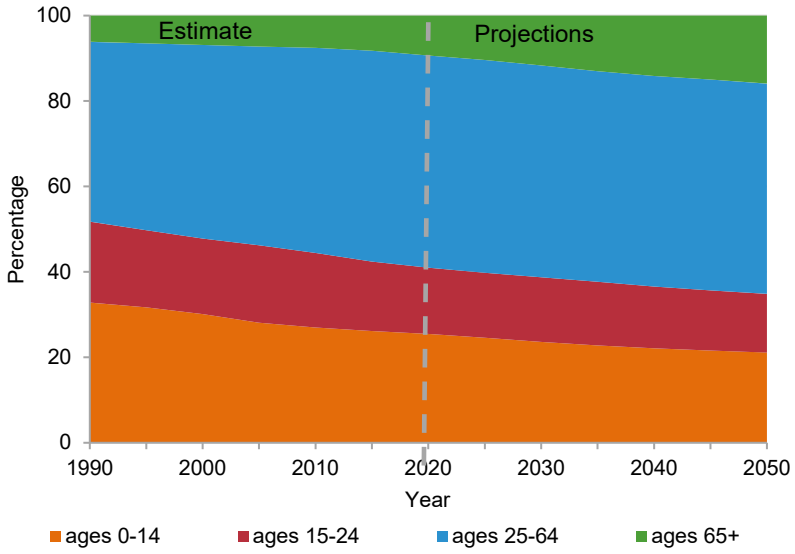
Source: United Nations Department of Economic and Social Affairs, Population Division (2019). *World Population Prospects 2019.*

As populations grow older, shares of working-age adults (25 to 64 years) and older persons (65 years or older) are rising, while shares of children (0 to 14 years) and youth (15 to 24 years) are falling

In 1990, the adult population at working ages (25 to 64 years)[2] constituted the largest age segment of the global population (42 per cent), followed by children aged 0 to 14 years (33 per cent) (figure I.3). Although the older population (65 years and above) comprised only 6 per cent of the total population in 1990, its share is projected to increase to 16 per cent in 2050. The share of working-age adults is also projected to increase from 42 per cent in 1990 to 49 per cent in 2050—while the share of youth (15 to 24 years) is projected to fall from 19 to 14 per cent over the same period, and that of children from 33 to 21 per cent.

[2] This age range is used in this section for convenience only; several possible age ranges can be used to delimit the working-age population, depending on the purpose of the analysis and presentation.

Figure I.3. Global distribution of population by broad age group, 1990-2050



Source: United Nations Department of Economic and Social Affairs, Population Division (2019). *World Population Prospects 2019*.

The speed of population ageing is fastest in Eastern and South-Eastern Asia

For the period between 2019 and 2050, nine of the 10 countries with the largest projected percentage point increase in the share of older persons are found in Eastern and South-Eastern Asia (figure I.4). The largest increase is foreseen for the Republic of Korea (23 percentage points), followed by Singapore (21 percentage points) and China, Taiwan Province of China (20 percentage points). Spain is the only country of Europe among the 10 countries with the largest projected increase in the share of older persons by 2050.

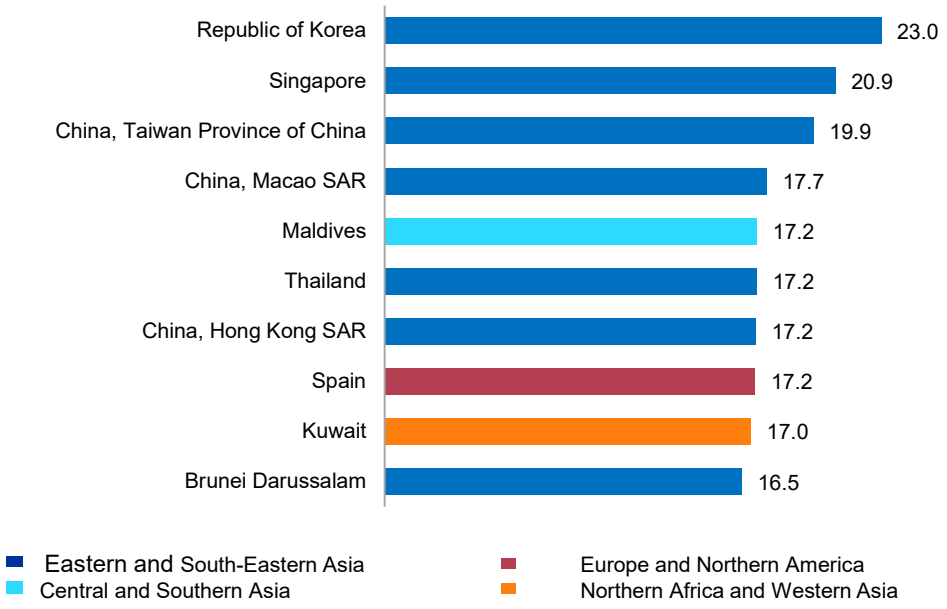
All regions have seen an increase of life expectancy at birth since 1990, with the largest gains in sub-Saharan Africa

In addition to the significant role of fertility decline, improvements in survival into older ages have contributed significantly to population ageing (Lee and Zhou, 2017; Murphy, 2017; Preston and Stokes, 2012). Between 1990-1995 and 2015-2020, global life expectancy at birth increased by 7.7 years (12 per cent) and is projected to increase by an additional 4.5 years (6 per cent) between 2015-2020 and 2045-2050 (figure I.5). Sub-Saharan Africa experienced the largest increase (11.4 years), rising from 49.1 years in 1990-1995 to 60.5 years in 2015-2020, and a further gain of 7.6 years is anticipated between 2015-2020 and 2045-2050.

In most parts of the world, survival beyond age 65 is improving

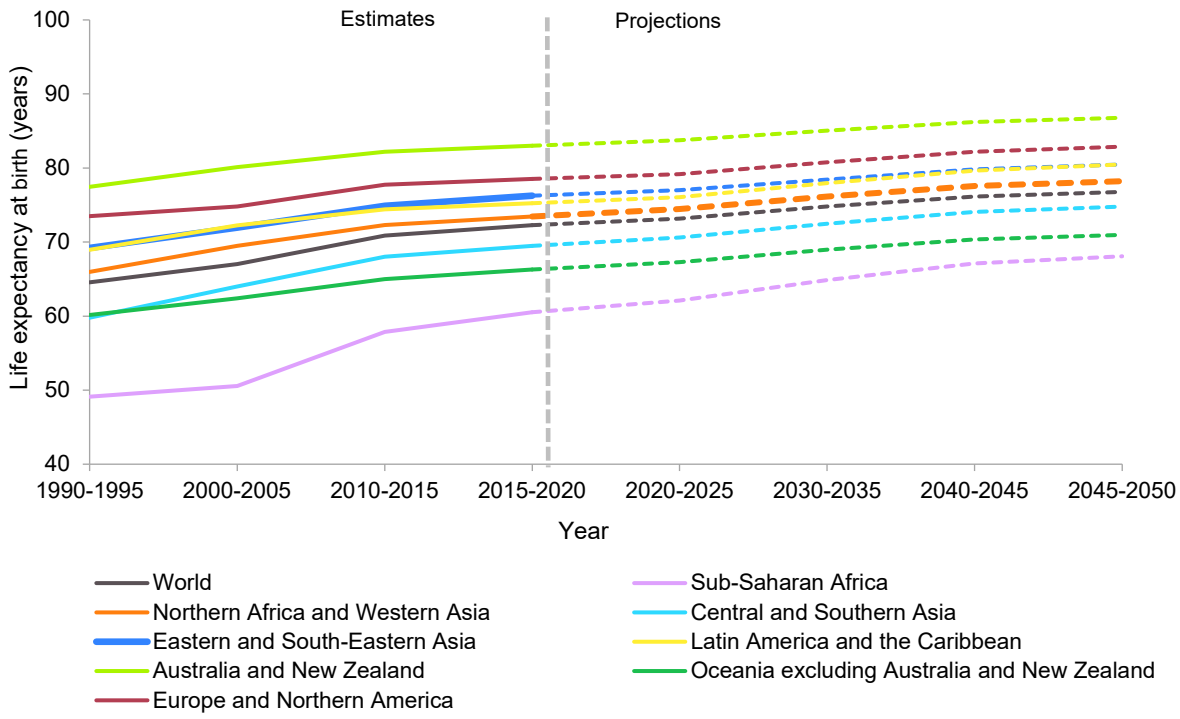
While life expectancy at birth has improved, the improvement in life expectancy at older ages has been even more rapid. Life expectancy at age 65 reflects the average number of additional years of life a 65-year-old person would live if subjected to the age-specific mortality risks of a given period throughout the remainder of his or her life. Globally, a person who is turning 65 years old could expect to live an additional 17 years in 2015-2020, and this number could rise to 19 years in 2045-2050. The current level of life expectancy at age 65 is highest in Australia and New Zealand, where it is expected to increase further from 21.2 years in 2015-2019 to 23.9 years in 2045-2050. By contrast, persons who reach age 65 in Oceania and sub-Saharan Africa are projected to live only an additional 14.0 and 14.2 years, respectively, in 2045-2050.

Figure I.4. Countries or areas with the largest projected increase in the share of persons aged 65 years or over, 2019-2050 (percentage points)[1]



Source: United Nations Department of Economic and Social Affairs, Population Division (2019). *World Population Prospects 2019*.
[1] Macao is designated as a Special Administrative Region of the People's Republic of China.

Figure I.5. Life expectancy at birth for both sexes combined, by region, 1990-2050



Source: United Nations, Department of Economic and Social Affairs, Population Division (2019). *World Population Prospects 2019.*

Women's longevity advantage over men results in a predominantly female older population

Women tend to live longer than men. At the global level in 2015-2020, women's life expectancy at birth exceeded that of men by 4.8 years (table I.3). The female advantage in longevity is largest in Latin America and the Caribbean (6.5 years), Europe and Northern America (6.1 years), and Eastern and South-Eastern Asia (5.3 years). By contrast, the female advantage is smaller in Central and Southern Asia (2.7 years), Oceania (3.0 years) and sub-Saharan Africa (3.5 years).

The female survival advantage persists at older ages. Globally in 2015-2020 women who turned age 65 were expected to live another 18 years, while men at the same age could anticipate living an additional 16 years on average. The gender gap in life expectancy at age 65 is largest in regions with high levels of life expectancy at birth, such as Eastern and South-Eastern Asia (3.4 years), Europe and Northern America (3.1 years), and Latin America and the Caribbean (2.8 years). By contrast, the gender gap is much smaller in regions with comparatively low levels of life expectancy at birth, such as Oceania (0.6 years), Central and Southern Asia (1.1 years), and sub-Saharan Africa (1.3 years).

Projections indicate that in 2050 women will constitute 54 per cent of the global population at ages 65 and above. Since the gender gap in survival rates between men and women is narrowing, the sex balance among persons aged 80 years or older will gradually become more even. The proportion of women at ages 80 years and higher is projected to decline slightly, falling from 61 per cent in 2019 to 59 per cent in 2050.

TABLE I.3. LIFE EXPECTANCY AT BIRTH AND AGE 65, BY SEX AND REGION, 2015-2020

	Life expectancy at birth (years)				*Life expectancy at age 65 (years)*			
Region	*Both sexes*	*Female*	*Male*	*Difference between female and male*	*Both sexes*	*Female*	*Male*	*Difference between female and male*
World	**72.3**	**74.7**	**69.9**	**4.8**	**17.0**	**18.3**	**15.6**	**2.7**
Sub-Saharan Africa	60.5	62.3	58.8	3.5	12.8	13.4	12.1	1.3
Northern Africa and Western Asia	73.5	75.7	71.3	4.4	16.0	17.1	14.8	2.3
Central and Southern Asia	69.5	70.9	68.2	2.7	14.7	15.2	14.1	1.1
Eastern and South-Eastern Asia	76.3	79.0	73.7	5.3	17.2	18.9	15.5	3.4
Latin America and the Caribbean	75.2	78.5	72.0	6.5	18.2	19.5	16.7	2.8
Australia and New Zealand	83.0	85.0	81.1	3.9	21.2	22.6	19.9	2.7
Oceania excluding Australia and New Zealand	66.3	67.8	64.9	3.0	12.6	12.9	12.3	0.6
Europe and Northern America	78.5	81.6	75.4	6.1	19.1	20.5	17.4	3.1

Source: United Nations Department of Economic and Social Affairs, Population Division (2019). *World Population Prospects 2019.*

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II. MEASURES OF POPULATION AGEING

Population ageing refers to a shift in the age distribution of a population toward older ages. One manifestation of this shift is an increase in the proportion of older persons. The upward shift in the age distribution is typically caused both by reductions in fertility and by improvements in survival, when successive cohorts have fewer children and live longer.

Simple measures, such as the percentage of older persons or the median age of a population, are easily understood by a general audience and therefore are often used to describe population ageing. Over the years, economists and demographers have developed various measures to assess the impact of population ageing on economic outcomes (box II.1). Frank Notestein, the first Director of the United Nations Population Division (1947-1948), introduced the old-age dependency ratio—one of the first metrics used to approximate the economic dependency associated with a growing share of population at older ages—into the standard repertoire of indicators published by the Division. With the increased availability of data necessary for assessing the socio-economic realities of ageing societies, more elaborate concepts and metrics have been developed to account for the diversity of capacities and dependencies across ages. These approaches take into consideration increases in life expectancy or combine economic and demographic data to analyse the interrelationships between age-specific consumption, production, dependency and the population age structure.

This chapter reviews three measures of population ageing that have been used to analyse the impact of shifting population age structures on both public and private systems for providing economic support and social protection to older persons: namely, the old-age dependency ratio, the prospective old-age dependency ratio and the economic old-age dependency ratio.

A. POPULATION AGEING SEEN FROM A CONVENTIONAL PERSPECTIVE: THE OLD-AGE DEPENDENCY RATIO

The old-age dependency ratio (OADR) is defined as the number of persons aged 65 years or over per 100 persons of working age (20 to 64 years). The OADR is one of the most commonly used indicators for monitoring changes in the age structure of populations. With declining fertility and increased longevity, the relative size of older age groups increases while that of younger age groups declines.

The old-age dependency ratio is projected to increase in all regions of the world, particularly in Eastern and South-Eastern Asia and in Latin America and the Caribbean

Since 1990, the OADR has increased continuously in all regions, though its level and speed of increase have varied (figure II.1). Globally, in 2019 there were 16 persons aged 65 years or older per 100 persons aged 20-64. By 2050 this ratio is projected to increase to 28 per 100.

In Europe and Northern America, there were 30 older persons per 100 working-age persons in 2019. This ratio is projected to rise sharply, reaching 49 per 100 in 2050. In Australia and New Zealand, the OADR is projected to increase from 27 per 100 in 2019 to 42 per 100 in 2050.

The OADR is expected to more than double between 2019 and 2050 in Eastern and South-Eastern Asia, in Latin America and the Caribbean, in Northern Africa and Western Asia, and in Central and Southern Asia. In Eastern and South-Eastern Asia, the ratio is projected to rise from 18 older persons per 100 working-age population in 2019 to 43 per 100 in 2050, while in Latin America and the Caribbean it will increase from 15 to 33 per 100 over

the same period. In Northern Africa and Western Asia and in Central and Southern Asia, old-age dependency ratios are also expected to more than double between 2019 and 2050, rising from around 10 to around 22 per 100.

In contrast, the OADR remains relatively low in Oceania and in sub-Saharan Africa. The OADR is expected to increase between 2019 and 2050 from 8 to 14 per 100 in Oceania, and from 7 to 9 per 100 in sub-Saharan Africa.

Box II.1. A brief history of dependency ratios: Assessing the impact of population ageing on the economy

Dependency ratios compare the relative size of different population groups, typically age groups. They are used to assess the impact of population ageing on the economy, including its impact on public finances.

The concept and measures of dependency ratios have evolved over time. Starting in the second half of the 18th century in parts of Northwestern Europe, the Industrial Revolution brought a fundamental transition from an agrarian economy based on manual labour to an industrial economy that relied on mechanized production.

This shift fundamentally transformed economic, social, cultural and political life throughout Europe and, eventually, the rest of the world. Yet economists and population statisticians continued to focus their analysis on the contributions to the economy of manual and physically demanding work, provided mainly by male labourers between ages 15 and 65 years, and on how that labour could sustain the population as a whole.

The concept of dependency ratios was first introduced by the Latvian economist, statistician and demographer Carl Ballod in 1913. To categorize the population by age according to contributions made to the national economy, he established five age groups (Ballod, 1913):

(1) Adults between ages 20 and 60 (fully capable of working);

(2) Youth between 15 and 20 years and adults between 60 and 70 years (reduced capacity to work);

(3) Youth under age 15 and adults over age 70 (incapable of working).

Based on this classification, Ballod assumed that youth between ages 15 and 20 and older persons between ages 60 and 70 were able to sustain themselves. Adults between ages 20 and 60 years were considered fully productive in the sense that they produced more than they needed to sustain themselves and could thus support the less productive age groups. Adults over age 70 and children under age 15 were considered a "burden" on the fully productive age groups. Ballod defined the 'Belastungskoeffizient' (coefficient of burden) as the number of persons under age 15 or over age 70 divided by the number of persons between ages 20 and 60.

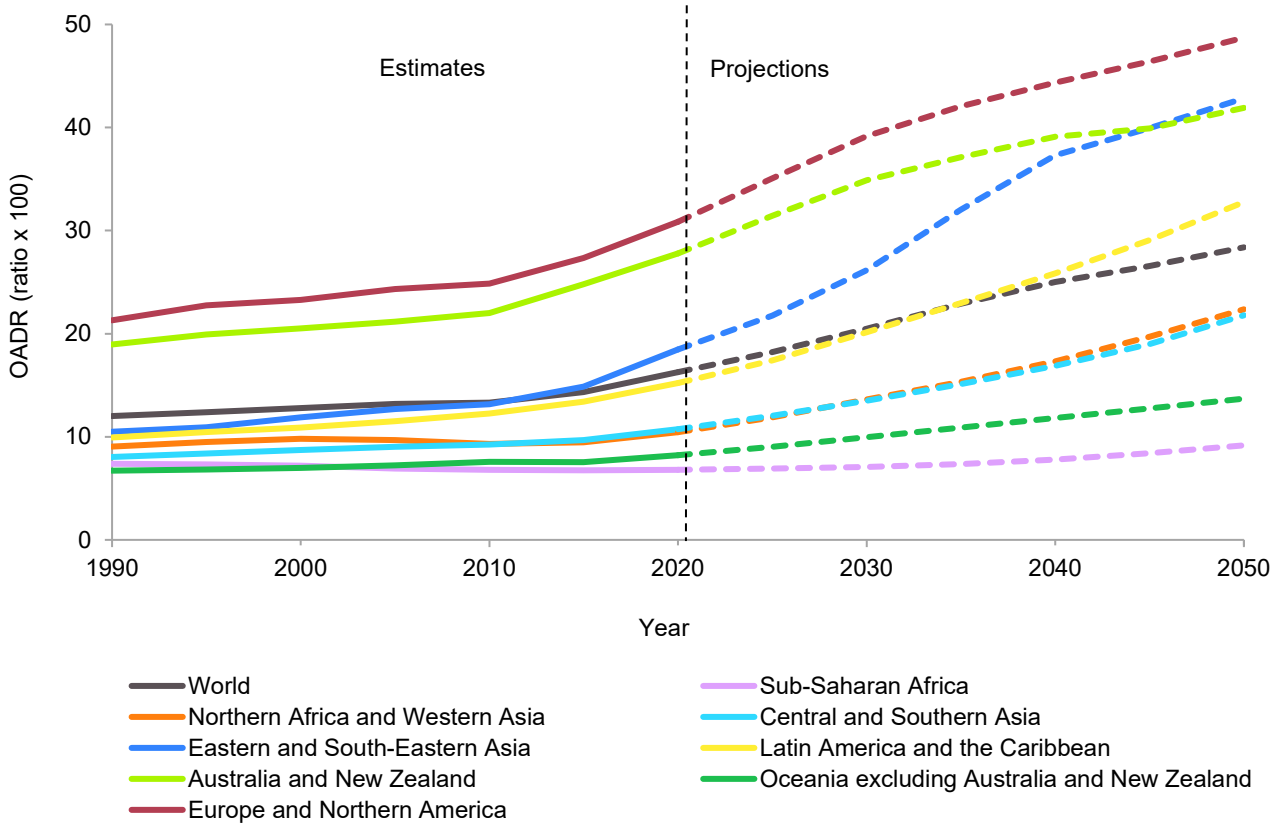
Recognizing the limitations of the conventional framework of structural changes and wage increases to analyse the extremely high unemployment rates of Germany in the early 1930s, Ernst Gunther (1931), a German economist and population statistician, also considered the possible impact of population size and composition on economic development. He based his analysis on the assumption that the population at ages 15 to 65 constitutes the core workforce, using as the upper boundary the statutory retirement age of 65 already adopted in Germany. He also realized that the economic contributions of all persons, including both men and women between ages 15 and 65, would not necessarily be the same.

Guenther therefore introduced a more precise approach for assessing the economic contributions of different age groups and of men and women. His assessments were based on the fact that most work was physically demanding labour in factories and agriculture at that time. He considered the male workforce between ages 25 and 40 to be the most productive segment of the workforce, whose economic contribution was assigned a value of 100 to serve as a standard of comparison. All other age groups were then considered to contribute, on average, a certain percentage of the standard. He assumed that children under age 15 as well as older persons over age 75 would not contribute to the economy and that women would only contribute two thirds of the male contribution in each age group.

Frank Notestein, the first Director of the United Nations Population Division (1947–1948), writing in Population and Power in Post-war Europe (1944), focused on the impact of shifting demographics on political, social and economic development. Notestein recognized that changes in a population's composition by age were potentially more important than changes in population size. Reviewing the impact of the Second World War on the size and distribution of populations in Europe and the Soviet Union, Notestein focused on males aged 15-64, the male labour force, and considered the possible impact of growth or decline in this age group on the economic development of post-war Europe. In The future population of Europe and the Soviet Union; population projections, 1940-1970 (Notestein, 1944), he used the term "total dependency ratio" for the first time, defining it as the ratio of the number of persons at ages 0-14 or above age 65 to the number of persons at ages 15-64.

This brief history of the old-age dependency ratio demonstrates the importance of the context in which these measures were developed. The analysis also illustrates the growing interest in demographic data and population dynamics during the first half of the 20th century, which was driven in part by the recognition that not only the size of a population but also its composition by age and sex matter for economic development and for the financing of age-based entitlement programmes.

Figure II.1. Old-age dependency ratios, by region, 1990-2050



Source: United Nations, Department of Economic and Social Affairs, Population Division (2019). *World Population Prospects 2019*.

While countries and areas with the highest old-age dependency ratios are predominantly European at present, more Asian countries and areas will have joined this group by 2050

Figure II.2 presents the 10 countries or areas with the highest OADR in 2019 and 2050. With 51 persons aged 65 years or over per 100 persons aged 20 to 64 years in 2019, Japan has the highest OADR in the world. Yet it is the only Asian country in this top group. Among the 10 countries and areas with the highest OADRs today, seven are in Europe, and two are in Latin America and the Caribbean. All countries and areas on the top-10 list for 2019 had an OADR above 35 per 100.

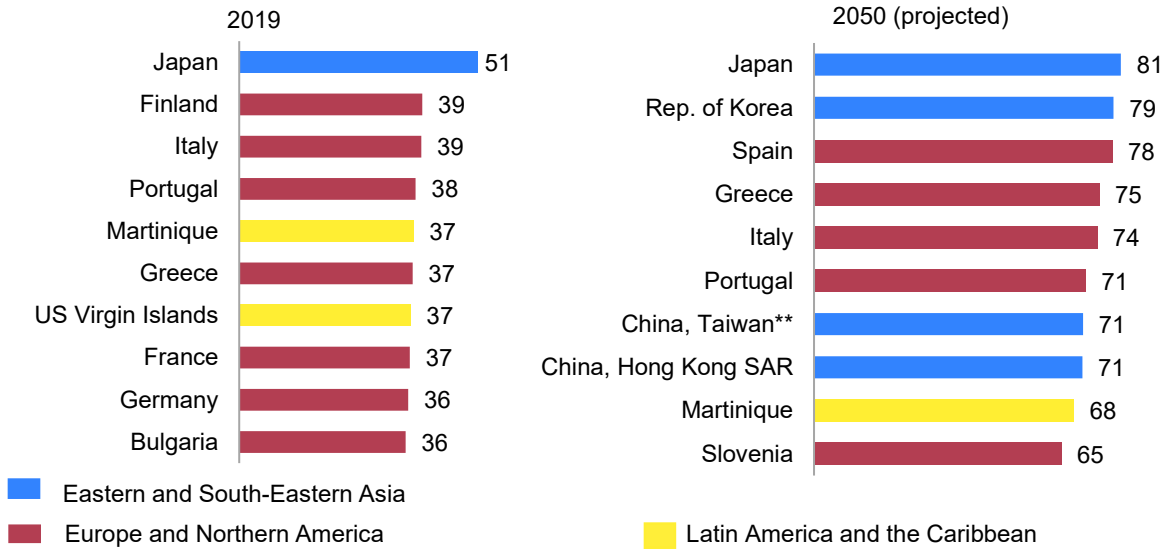
Projections indicate that in 2050 Japan will remain the country with the highest OADR, at 81 per 100. By mid-century, Japan will have been joined on this list by three other countries or areas in Eastern and South-Eastern Asia. The top-10 list will continue to include countries or areas in Europe and Northern America (5) and in Latin America and the Caribbean (1). All of them will have OADRs above 65 per 100 in 2050, well above Japan's value in 2019.

B. Measuring population ageing considering remaining years to live: The prospective old-age dependency ratio

While the OADR is useful as a simple metric to describe changes in the population structure, it is based on chronological age, usually using a set threshold of age 65 or older. However, the OADR is a poor proxy for the level of dependency experienced in a population and it does not take into account that, first, older persons are quite

diverse with respect to economic activity, including labour force participation and functional capacity, and, second, not all persons in the traditional working ages are active in the labour force, with some being economically dependent themselves.

Figure II.2. Ten countries or areas with the highest old-age dependency ratios, 2019 and 2050



Source: United Nations, Department of Economic and Social Affairs, Population Division (2019). *World Population Prospects 2019*.
** China, Taiwan Province of China.

Prospective measures that redefine population ageing based on remaining life expectancy instead of basing it on the number of years lived, capture increases in life expectancy in a population over time. One such measure is the prospective old-age dependency ratio (POADR) that defines the threshold of old age based on a remaining life expectancy of 15 years (Sanderson and Scherbov, 2005 and 2007).[3] The POADR is calculated as the number of persons above the age closest to a remaining life expectancy of 15 years relative to the number of persons between age 20 and that age.[4]

Trends in the prospective old-age dependency ratio suggest slower increases in dependency in many countries compared to the traditional old-age dependency ratio

Trends in the POADR suggest slower increases or even declines in dependency in many countries with substantial older populations compared to the projections of the traditional old-age dependency ratio (Figure II.1). This pattern can be observed at the global level, where the prospective old-age dependency ratio has declined slightly from 12.9 in 1990 to 11.6 in 2019, (-10 per cent), but it is projected to increase from 11.6 in 2019 to 17.3 by 2050 (+50 per cent) (figure II.3). Compared to the OADR, the POADR generally increases at a slower pace. For example, while the global OADR is projected to increase by 79 per cent from 2019 to 2050 (figure II.1), the global POADR will increase by only about 50 per cent (II.3).

[3] $Prospective\ old\text{-}age\ dependency\ ratio = \frac{Number\ of\ persons\ above\ the\ age\ closet\ to\ a\ remaining\ life\ expectancy\ of\ 15\ years}{Number\ of\ persons\ between\ age\ 20\ and\ that\ age}$

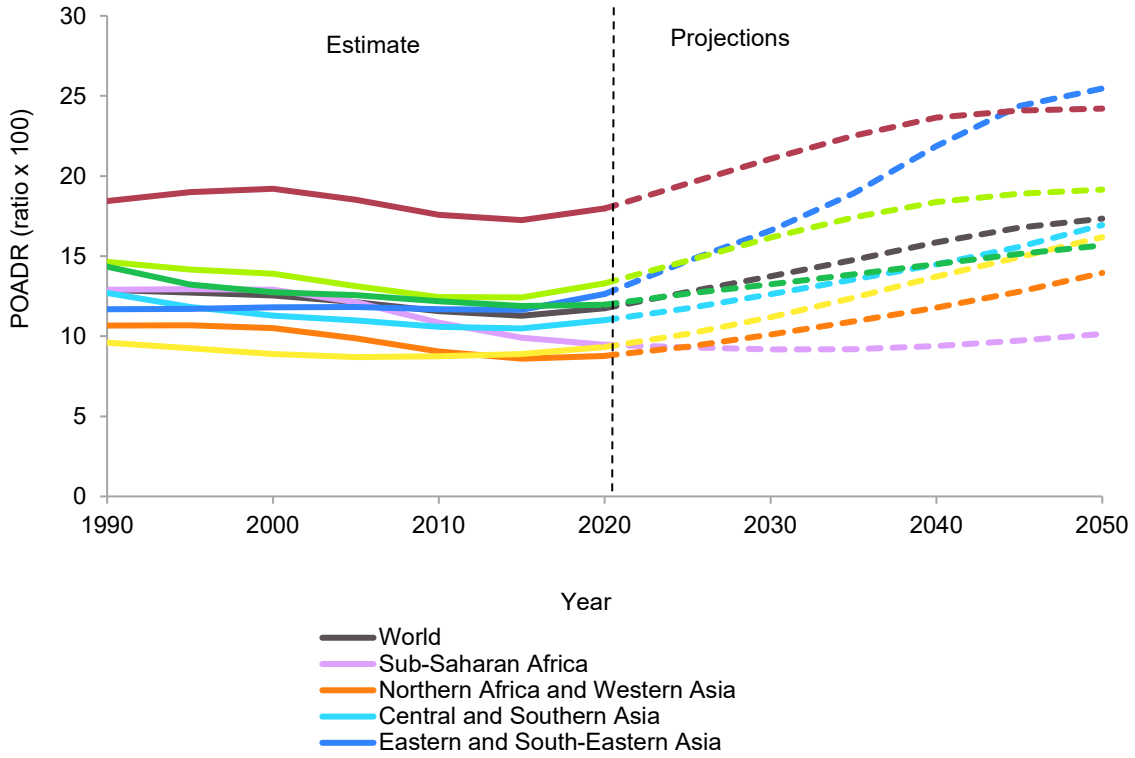
[4] A detailed description of the methodology to calculate the prospective old-age dependency ratio can be found in Sanderson and Scherbov (2005 and 2007).

The fastest increase will occur in Eastern and South-Eastern Asia, where the POADR is projected to increase from 12 in 2019 to 25 in 2050 (+107 per cent). The slowest increase will occur in sub-Saharan Africa, where the POADR remains almost unchanged at around 10 in both 2019 and 2050.

Countries or areas with the highest prospective old-age dependency ratio are predominantly in Europe

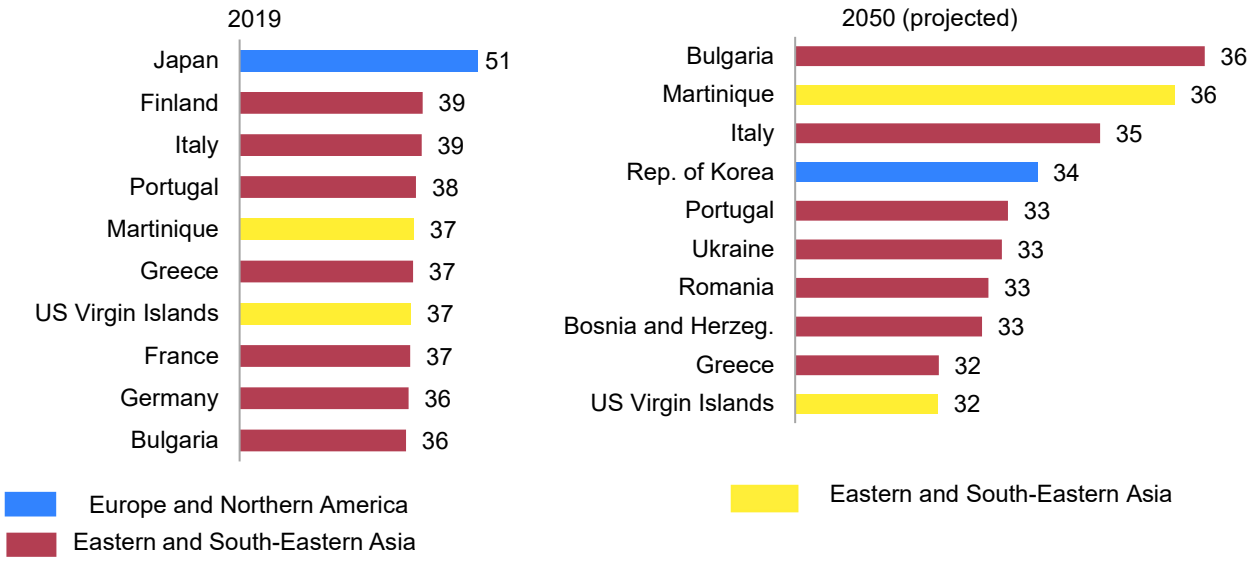
Figure II.4 presents the 10 countries or areas with the highest prospective old-age dependency ratios in 2019 and 2050. In 2019, 9 out of 10 countries with prospective old-age dependency ratios above 21 were in Europe. Bulgaria has the highest POADR with a value of 30 in 2019 and will maintain the lead with a ratio of 36 in 2050. Among the 10 countries or areas with a POADR of over 32 in 2050, seven are projected to be in Europe, one (Republic of Korea) will be in Eastern and South-Eastern Asia, and two (Martinique and United States Virgin Islands) in Latin America and the Caribbean.

Figure II.3. Prospective old-age dependency ratios, by region, 1990-2050



Source: Calculations provided by Warren Sanderson and Sergei Scherbov using *World Population Prospects 2019* databased on the methods developed by Sanderson and Scherbov (Sanderson and Scherbov, 2005, 2010, 2015).

Figure II.4. Ten countries or areas with the highest economic old-age dependency ratios, 2019 and 2050

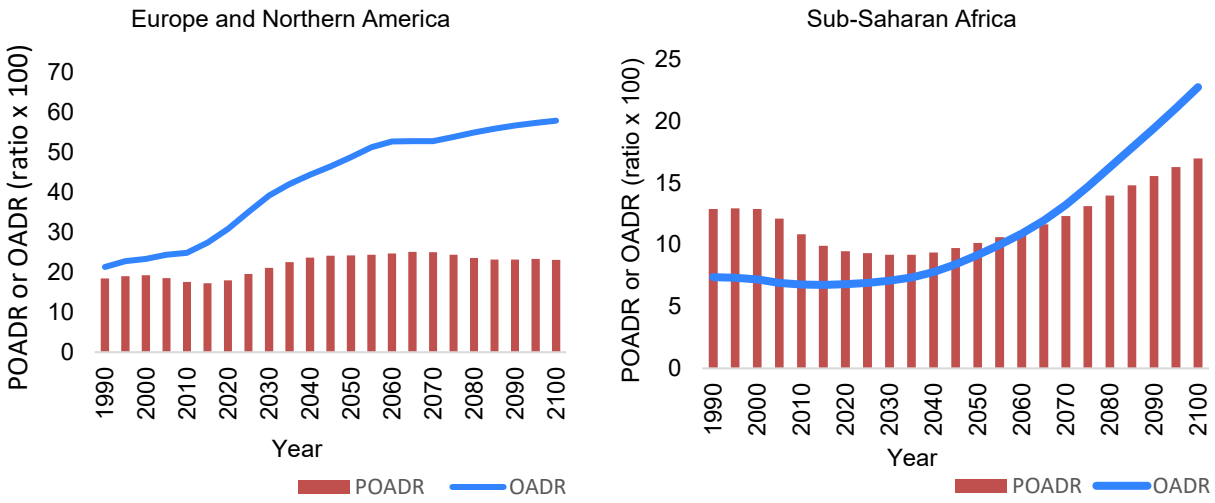


Source: Provided by Warren Sanderson and Sergei Scherbov based on the methods outlined in Sanderson and Scherbov (2005, 2010, 2015).

C. Comparing the evolution of the OADR and POADR for regions with the highest and lowest OADR

As discussed earlier, trends in the prospective old-age dependency ratio suggest slower increases or even declines in dependency in some countries, compared to the projections of the traditional old-age dependency ratio. One such example is Europe and Northern America (figure II.5), where the OADR increased from 21.3 in 1990 to 30.1 persons aged 65 or older per 100 persons aged 20-64 in 2019, whereas the POADR declined slightly from 18.4 in 1990 to 17.7 in 2019, reflecting changes in the age structure of the population as well as increases in life expectancy in 2019. After 2019, the old-age dependency ratio in Europe and Northern America is projected to increase at a much faster pace than the prospective old-age dependency ratio. In sub-Saharan Africa, on the other hand, the prospective old-age dependency ratio was higher than the conventional old-age dependency ratio between 1990 and 2019 (12.9 vs. 7.4 in 1990; 9.5 vs. 6.8 in 2019) as the life expectancy was less than 60 years in most of the countries in sub-Saharan Africa during this period. By 2050, both OADR and POADR will increase, reaching the ratio of 9.2 and 10.1, respectively, and both are expected to continue to increase after 2050.

Figure II.5. Old-age dependency ratio (OADR) and prospective old-age dependency ratio (POADR), Europe and Northern America and sub-Saharan Africa, 1990-2100



D. Measuring population ageing from an economic perspective: The economic old-age dependency ratio

In addition to measures based on chronological or prospective age, population ageing can also be measured and understood from an economic perspective. Economic measures of population ageing rely on data about productivity and other components of life cycle economic behaviour, as described in the National Transfer Accounts, or NTAs (United Nations, 2013; Lee and Mason, 2011; Mason and others, 2017) (box II.2). This section employs the concepts and methods of NTAs, which provide a comprehensive system for measuring aggregate economic flows between age groups for specified periods of time. These flows, also referred to as age reallocations, represent flows of economic resources from ages of life cycle surplus (when labour income exceeds consumption) to ages of life cycle deficit (when consumption exceeds labour income). A lifecycle surplus generally occurs during working ages, while a life cycle deficit typically characterizes childhood and older ages.

The economic old-age dependency ratio, or economic OADR, is defined as the effective number of consumers aged 65 years or over divided by the effective number of workers at all ages. In practice, the ratio is often multiplied by 100.[5]

[5] Economic old-age dependency ratio $= \frac{\sum_{x=65}^{w} c(x)N(x)}{\sum_{x=0}^{w} y(x)N(x)}$

where c(x) is the per capita consumption at age x; y(x) is the per capita labour income at age x; and N(x) is the population of age x.

One advantage of this measure is that it incorporates age-specific variations in labour income and consumption resulting from differences across countries in labour force participation, unemployment, hours worked, labour productivity and consumption. In other words, the ratio reflects the resource needs (consumption) of older persons relative to the resources produced (labour income) by all workers, irrespective of their age. An increasing economic OADR indicates that the number of effective older consumers per effective worker is increasing. This, in turn, can change the demand for, and the means of, financing the consumption of goods and services at older ages, including with pension and health care benefits. To sustain a given level of consumption, older persons have in principle the following options: a) earn labour income; b) draw income from assets, or c) receive economic support from families or from public transfer programmes. As an alternative or complementary financial strategy, older persons may decide to reduce their consumption.

Box II.2. What are national transfer accounts (NTAs)?

National Transfer Accounts (NTAs) provide a comprehensive system for age-based accounting of economic flows. The system draws from the analytical methods of demography and economics to examine how economic resources are reallocated across individuals of different ages through the family, the government and the market. With NTAs, it is possible to examine the economic lifecycle in a population and analyse the interactions between various available support mechanisms, such as public and private transfer systems, capital markets and own work. This body of work has become increasingly important for policy makers as they look for ways to address concerns about the consequences for standards of living and for the sustainability of government programmes arising from fertility decline and population ageing.

Individuals go through extended periods of dependency at the beginning and end of their lives: children and older persons consume more resources than they produce through their own labour. Conversely, working-age adults generally produce more than they consume. The relative size of these age groups and the extent of their dependency determine the level of support needed from the working-age population. What makes this economic lifecycle possible is the flow of resources over time and across generations through a complex system of social, economic and political institutions. NTAs provide a methodology designed to measure systematically and to understand how population growth and changing age structures influence economic growth, gender and generational equity, public finances and other important macro-economic features.

Key building blocks of the NTAs are the age profiles of labour income and consumption across countries, generated using a standardized approach (United Nations, 2013). Additionally, NTAs include the estimation of economic resource flows between age groups used to support consumption at all stages of life. The NTA measure of labour income is comprehensive, including both full- and part-time employment in both the formal and informal sectors, as well as levels of unemployment and worker productivity. Labour income includes the value of employee earnings, employer-provided benefits, taxes paid to the government by employers on behalf of employees, the share of entrepreneurial income that is a return to labour, and the estimated value of unpaid family labour. Consumption is defined as the consumption of all goods and services from both public and private sources.

The "sharing" and "saving" resource flows refer, respectively, to private and public transfers between age groups on the one hand, and to the use of accumulated assets to fund later consumption on the other hand. Education, pensions and health care are important examples of government programmes that transfer resources between age groups. Transfers also occur within families. In addition to relying on income from labour and transfers, individuals also fund their consumption with income derived from their assets, including the drawing down of accumulated savings (United Nations, 2013).

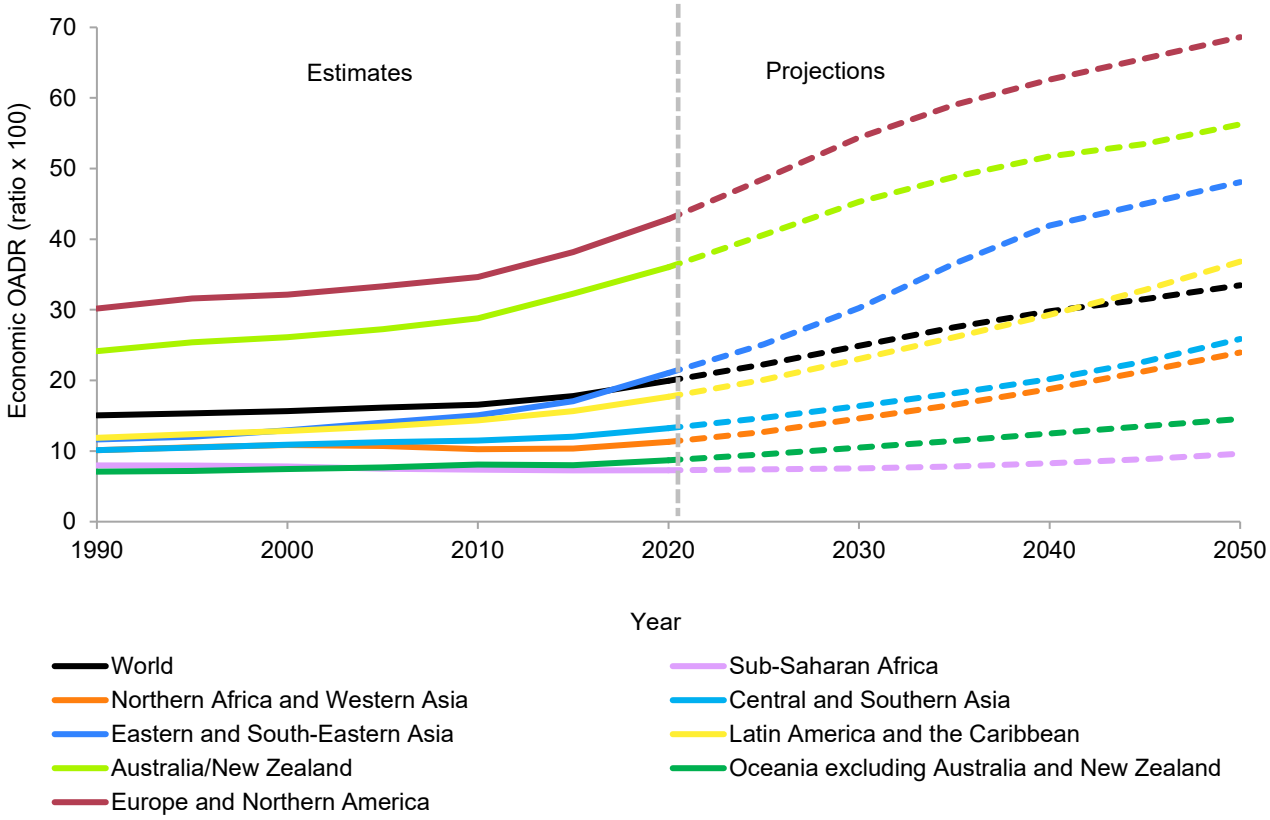
NTAs are compiled from a variety of data sources, including national income and product accounts, government financial statistics and administrative records, nationally representative income and expenditure surveys, labour-force surveys, health-expenditure surveys and special purpose household surveys. Details of the methodology are explained in the National Transfer Accounts Manual (United Nations, 2013) and other publications (Lee and Mason, 2011, 2010, 2006). By 2018, more than 90 countries had research teams—based in universities, research organizations and government agencies—that were working to create NTA estimates to map the generational economy.

The economic old-age dependency ratio is increasing around the world

According to the latest calculations made with NTA data, population ageing will result in a global increase from 20 effective older consumers (ages 65+) per 100 effective workers (of all ages) in 2019 to 33 per 100 in 2050 (figure

II.6). Currently, two regions—Europe and Northern America, and Australia and New Zealand—have the highest observed levels of economic OADR, at 43 and 36 per 100, respectively. These high ratios reflect high levels of consumption at older compared to younger ages, and a rapidly increasing share of older persons in the population. It is projected that similarly high ratios of around 40 effective older consumers (ages 65 and above) for every 100 effective workers (of all ages) will be observed in two other regions in the coming decades—in Eastern and South-Eastern Asia by 2040 and in Latin America and the Caribbean by 2050.

Figure II.6. Economic old-age dependency ratios, by region, 1990-2050



Source: Andrew Mason and Ronald Lee, based on the method outlined in Mason and others (2017). Support ratios and demographic dividends: Estimates for the world. United Nations Population Division Technical Paper No. 2017/1.

Note: The economic ratios used to construct this figure were derived using population estimates and projections for all countries or areas from the United Nations (2019), as well as age profiles of consumption and labour income for 60 countries or areas with available NTA data, plus modelled age profiles for 106 additional countries or areas, yielding NTA estimates for 166 countries in total.

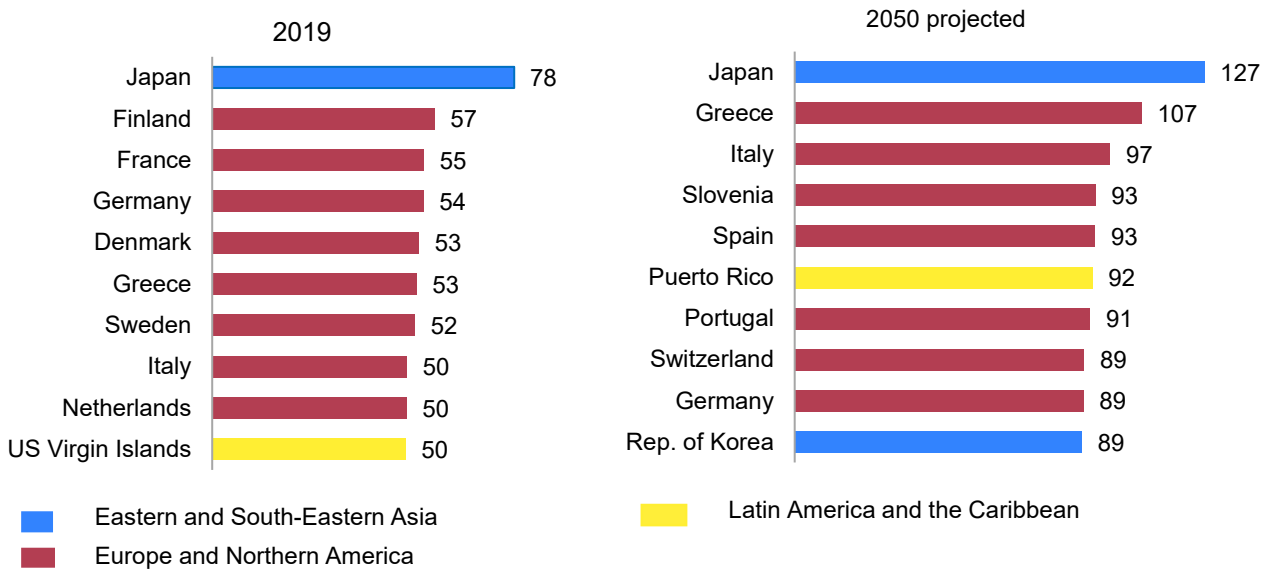
Sub-Saharan Africa and Oceania are currently experiencing the lowest levels of the economic OADR, with values of 7 and 9 per 100, respectively. However, by 2050 these ratios are projected to increase gradually to 10 per 100 in sub-Saharan Africa and to 15 per 100 in Oceania (figure II.6).

Countries or areas with the highest economic old-age dependency ratio are mostly located in Europe and Northern America

Countries or areas with the highest economic OADR are mostly found in Europe and Northern America. Japan is the most aged country in the world and will continue to occupy this position in 2050, based on both the conventional OADR (figure II.2) and the economic OADR (figure II.7). Other countries or areas among those with

the highest economic OADR at present are, from largest to smallest, Finland, France, Germany, Denmark, Greece, Sweden, Italy, the Netherlands and the United States Virgin Islands (figure II.7). All of these countries had economic ratios of 50 or more effective older consumers per 100 effective workers in 2019. By 2050, the economic OADRs in these countries or areas are projected to reach values of 89 or higher. By mid-century, in order of magnitude, Slovenia, Spain, Puerto Rico, Portugal, Switzerland and the Republic of Korea are expected to replace Finland, France, Denmark, Sweden, the Netherlands and the United States Virgin Islands among the 10 countries with the highest economic OADRs, while Japan, Germany, Greece and Italy are expected to remain in this group.

Figure II.7. Ten countries or areas with the highest economic old-age dependency ratios, 2019 and 2050



Source: Andrew Mason and Ronald Lee, based on the method outlined in Mason and others (2017). Support ratios and demographic dividends: Estimates for the world. United Nations Population Division Technical Paper No. 2017/1.

Note: The economic ratios used to construct this figure were derived using population estimates and projections for all countries or areas from the United Nations (2019), as well as age profiles of consumption and labour income for 60 countries or areas with available NTA data, plus modelled age profiles for 106 additional countries or areas, yielding NTA estimates for 166 countries in total.

E. Comparing the three measures: The OADR, POADR and economic ratios

The three measures presented above—the old-age dependency ratio (OADR), the prospective old-age dependency ratio (POADR) and the economic old-age dependency ratio—examine population ageing from different perspectives, applying different methods and resulting in different indications of the level and speed of population ageing. Each measure serves a unique purpose, and thus its suitability depends on the objectives of users. This section presents a comparative analysis of results derived using the three measures.

Comparing the POADR with the OADR, the POADR is found to be lower in all regions, except in sub-Saharan Africa and Oceania (table 4). In 2019, the POADR was only half of the OADR in Australia and New Zealand, and more than half (60 per cent) of the OADR in Europe and Northern America and in Latin America and the Caribbean. POADR values are the same as the OADR values for Central and Southern Asia in 2019. For all regions except Australia and New Zealand, the ratio of the POADR to the OADR will fall between 2019 and 2050. That is, when lifespans are lengthening, the POADR indicates that population ageing is less severe than what is implied by the OADR.

The economic old-age dependency ratio is slightly higher than the OADR in all regions (table II.1), the difference being greater in Europe and Northern America and in Australia and New Zealand compared to other regions. This result is not surprising given the relatively high consumption at older ages in these regions. By contrast, it is anticipated that the economic impact of population ageing in sub-Saharan Africa, in Northern Africa and Western Asia, in Eastern and South-Eastern Asia and in Oceania will be less severe than in other regions for the foreseeable future. This is because older persons in most countries of these regions tend to work longer,[6] and they do not have the kind of elevated consumption compared to younger age groups found in many high-income countries.

TABLE II.1. COMPARISON OF OLD-AGE DEPENDENCY RATIOS BASED ON DIFFERENT DEFINITIONS AND METHODS, BY REGION, 2019 AND 2050

	POADR divided by OADR		*Economic ratio divided by OADR*	
Region	*2019*	*2050*	*2019*	*2050)*
World	**0.7**	**0.6**	**1.2**	**1.2**
Sub-Saharan Africa	1.4	1.1	1.1	1.0
Northern Africa and Western Asia	0.9	0.6	1.1	1.1
Central and Southern Asia	1.0	0.8	1.2	1.2
Eastern and South-Eastern Asia	0.7	0.6	1.1	1.1
Latin America and the Caribbean	0.6	0.5	1.2	1.1
Australia and New Zealand	0.5	0.5	1.3	1.3
Oceania excluding Australia and New Zealand	1.5	1.1	1.1	1.1
Europe and Northern America	0.6	0.5	1.4	1.4

Source: OADR is tabulated from United Nations Department of Economic and Social Affairs, Population Division (2019). *World Population Prospects 2019*. POADR is provided by Warren Sanderson and Sergei Scherbov based on the methods outlined in Sanderson and Scherbov (2005, 2010, 2015). Economic ratio is provided by Andrew Mason and Ronald Lee based on the method outlined in Mason and others (2017).

Measures of population ageing inform policy makers about the shift of population age structures towards older populations over time and allow for comparisons across countries and regions, spurring the development of public policies. Each measure offers a different perspective and serves different purposes, with its own advantages and disadvantages.

The OADR is an indicator of the changing population age structure that is simple to compute and easy to comprehend. The data for calculating this indicator are available for all countries and areas of the world over long periods of time. The OADR, however, may not be well suited for studying a particular health or pension reform, nor does it provide a reliable measure of economic dependency.

The POADR examines population ageing in the context of increasing life expectancy. It suggests that changes in dependency due to population ageing are not as extreme and have not proceeded as quickly as indicated by the conventional measure (the OADR), especially in high-income countries. Since the increase of life expectancy do not benefit all population groups equally (Auerbach and others, 2017; Bennet and others, 2018; NASEM, 2015; Waldron, 2007) the prospective old-age dependency ratio offers a potential means of analysing differential impacts of policy changes, for example in the retirement age.

The economic OADR integrates patterns of consumption and production and changes in the population age structure into a synthetic measure of economic dependency. This approach allows for an explicit linkage between

[6] NTAs measure work in both formal and informal sectors. The labour income measure is comprehensive, taking into account full time and part-time employment in both formal and informal sectors, unemployment, and productivity.

population ageing and the generational economy, providing useful information for fiscal and social planning. The use of NTAs has been expanding during the last few decades (current participation in the NTA project involves 90 countries), and an increasing number of countries have been generating data and estimates for multiple points in time, facilitating cross-national comparisons.

III. HOW DOES POPULATION AGEING AFFECT ASSETS, TRANSFERS AND WORK?

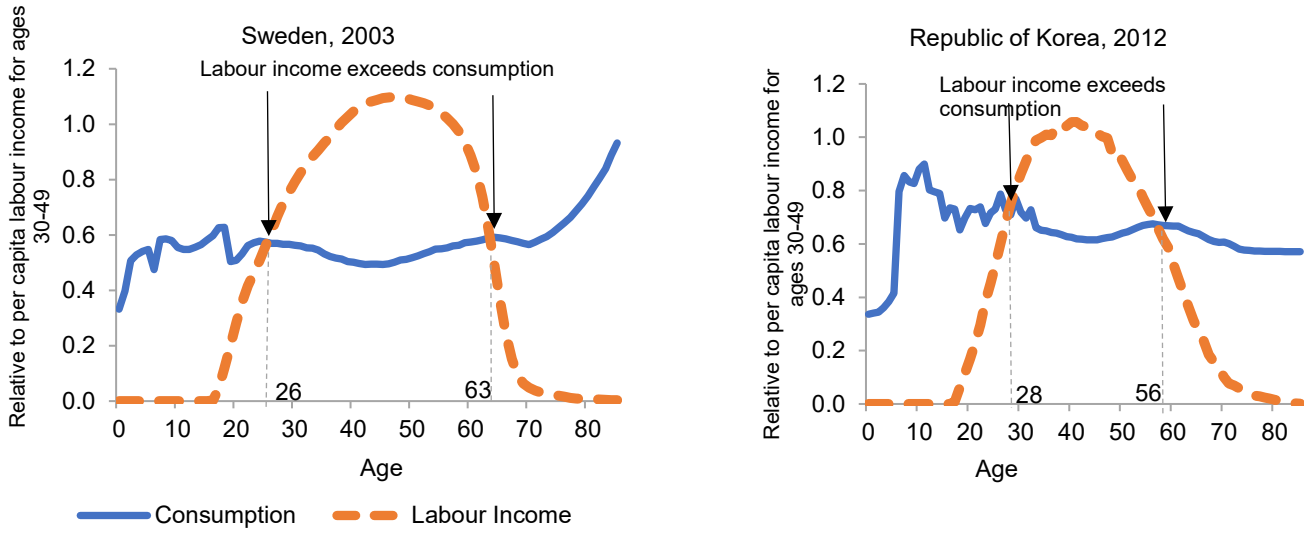
The objective of this chapter is to illustrate how older persons in different countries finance their consumption through transfers, assets and work, using data from the National Transfer Accounts (NTAs) project for 29 countries with available data.[7][8] The present analysis assesses the likely impact of population ageing on assets, transfers and work should the current old-age funding mechanisms in these countries remain in place. Although it provides useful insights into changes across space and time, this comparative study does not substitute for more detailed country-specific analyses and forecasting.

Economic lifecycle

The economic life cycle is a universal feature of all contemporary societies. At the beginning and the end of life, consumption generally exceeds production through a person's own labour, while in the middle years production generally exceeds consumption.

Figure III.1 compares the per capita consumption and labour income of Sweden and the Republic of Korea. The labour income age profile, an inverse U-shape, is broadly similar for the two countries, with labour income rising steeply for those in their 20s, reaching a peak around age 40 and declining thereafter. The largest differences between the two countries in labour income by age occur at older ages. In Sweden labour income is concentrated in the later middle years, between ages 40 and 60, while in the Republic of Korea it is concentrated at somewhat younger ages, between ages 30 and 50.

Figure III.1. Per capita consumption and labour income across the lifecycle, Sweden (2003) and Republic of Korea (2012)



Source: NTA Database. Available from www.ntaccounts.org. Accessed on 3 June 2019.

Note: NTA defines labour income comprehensively to include the value of most productive work: The earnings of employees, employer-provided benefits, taxes paid to the government by employers on behalf of employees, the proportion of entrepreneurial income that is a return to labour and the estimated value of unpaid family labour. Consumption in NTA includes goods and services from both public and private sources.

[7] The calculations were generously provided by Andrew Mason and Ronald Lee (2018) using estimates and projections from the World Population Prospects and NTA age-profiles for the 29 countries.

[8] Australia and New Zealand (1 country), Central and Southern Asia (1 country), Eastern and South-Eastern Asia (8 countries and areas), Europe and Northern America (11 countries), Latin America and the Caribbean (7 countries), Sub-Saharan Africa (1 country).

Consumption patterns also vary noticeably. In Sweden, consumption increases at older ages mainly because of high health-care costs. In contrast, consumption remains flat at older ages in the Republic of Korea at about 60 per cent of the labour income of a prime working-age adult. Consumption among children in the Republic of Korea takes up a higher proportion of labour income than in Sweden—about 80 per cent in the Republic of Korea compared to about 60 per cent in Sweden.

Economic independence

Economic independence is achieved at ages for which production exceeds consumption. Figure III.1 shows that economic independence covers ages 26 to 63 years in Sweden, while it occurs between ages 28 and 56 in the Republic of Korea (in both cases, this refers to the age range between the first and second crossing of the two lines).

Financing of lifecycle deficits

In the framework of National Transfer Accounts, a "life cycle deficit" occurs when consumption expenditures exceed labour income; this is generally found in the younger and older age groups (figure III.1). To fund life-cycle deficits in different stages of life, various economic and social mechanisms reallocate resources across age groups. The main mechanisms are asset-based reallocations, public transfers and private transfers.

Asset-based reallocations involve two kinds of flows: asset income and savings. One such example is private pension funds or personal savings acquired during the working years when production exceeds consumption, which can then be drawn on during retirement. Another form of asset-based reallocation is student loans (a form of negative saving), that provide the borrower with funds he or she can use in anticipation of future earnings.

Public transfers are another mechanism for reallocating funds whereby the government collects tax revenues mainly from the working-age population (such as income and property taxes), which are used to fund programmes that benefit age-groups with life-cycle deficits, such as children (public education), older persons (public pensions) and other age groups as needed or desired (public health measures, safety and security).

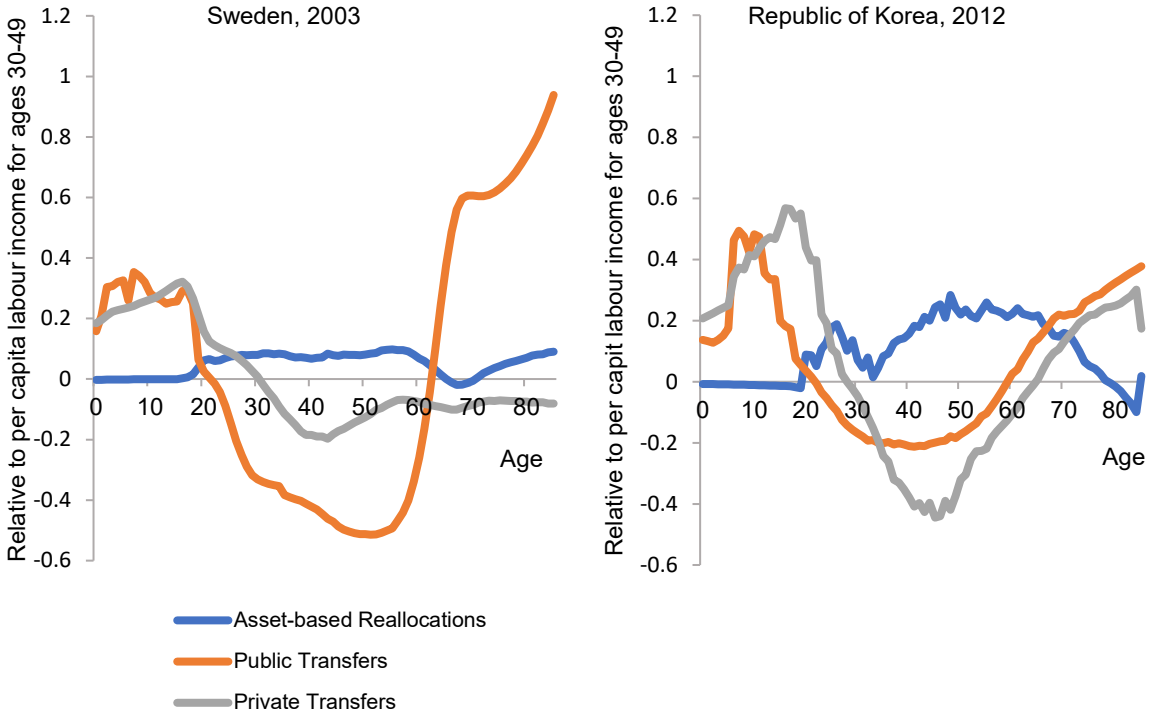
Private transfers are intergenerational flows of economic resources made, typically, within families, including the support that parents provide to their children in the form of housing, food, health care and education. It is common in some countries that adult children finance the lifecycle deficits of their older parents. In some countries, however, older persons support their children and grandchildren through financial transfers.

Sweden is an example where public transfers are dominant for reallocating resources from one age group to another. Swedish children up to age 20 receive similar amounts of public and private transfers, each of which is roughly equivalent to one third of a prime working-age adult's annual labour income (figure III.2). Adults between ages 30 and 60 pay very high public taxes, equivalent to between 30 and 50 per cent of a prime working-age adult's labour income. In return, Swedes receive generous public benefits at older ages. In this context, asset-based reallocations (asset income and dis-savings) play a much smaller role, equivalent to less than 10 per cent of the labour income of a prime working-age adult.

In contrast to the situation in Sweden, the Republic of Korea relies more heavily on asset-based reallocations and private transfers across all ages (figure III.2). Children receive more private than public transfers. Private investment in education for a child during high school and college years is very high, reaching on average more than half of the annual labour income of a prime working-age adult. Adults accumulate assets and rely on asset income to fund consumption at older ages when labour income is insufficient. Not much dis-saving is observed at older ages, so that most accumulated assets are bequeathed to the next generations rather than being consumed at older ages. Public transfers play a less important role in reallocating resources across age groups in the Republic of

Korea, where working-age adults pay public taxes amounting to around 20 per cent of their labour income, roughly the same amount they will receive as public benefits later in life.

Figure III.2. Per capita financing of lifecycle deficits, Sweden (2003) and Republic of Korea (2012)



Source: NTA Database. Available from www.ntaccounts.org. Accessed on 3 June 2019.
Note: Public transfers and private transfers are net amounts (inflows minus outflows).

A. How older persons fund their consumption: Transfers, assets, and work

Consumption of older persons is funded in different ways around the world

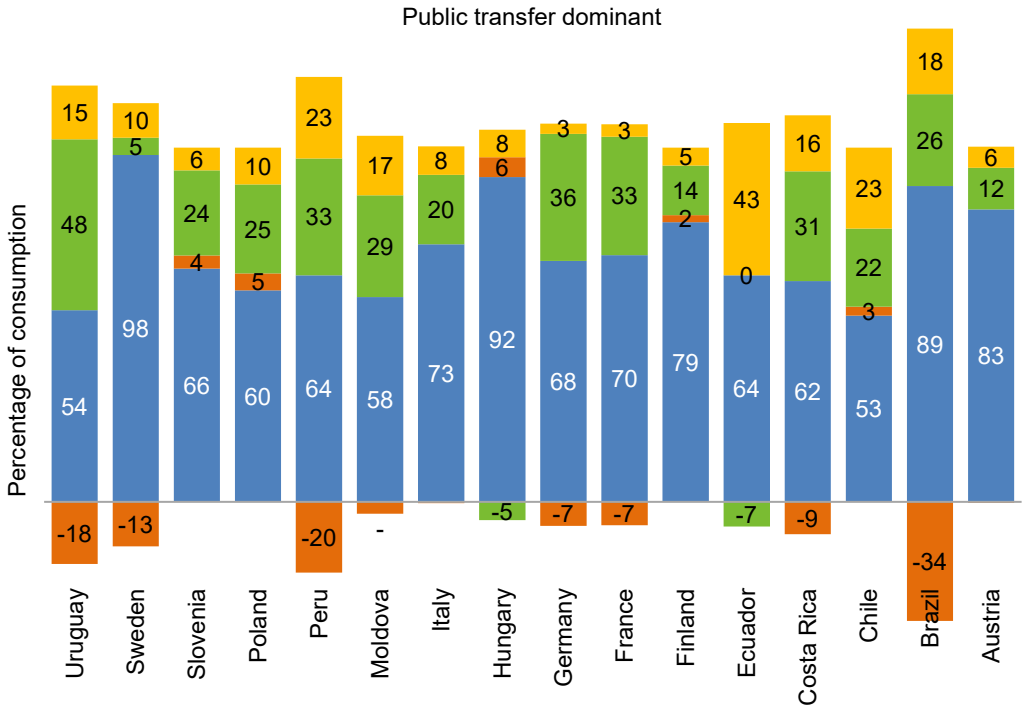
The consumption of older persons is financed from four different sources: (1) public programmes such as pensions, health care and other social welfare programmes, (2) transfers from family members or other private sources (3) assets and accumulated wealth, and (4) labour income of the older persons.

Figures III.3 and III.4 illustrate the shares of total consumption by persons aged 65 or over across the four sources of funding mentioned above. Based on this information, countries have been clustered into four groups: (1) public transfer dominant, where old-age financing relies predominantly on public transfers, mainly found in Europe and Latin America; (2) asset dominant, where old-age financing depends mainly on income from assets, prevalent in countries in Southern Asia and South-Eastern Asia; (3) dual balanced, where old-age financing is based on assets and either public transfers or private transfers, found in Australia, Jamaica, Mexico, Singapore, Spain, United Kingdom and in the United States; (4) balanced, where consumption at older ages is financed by drawing on all four sources, namely assets, labour income, and both public and private transfers, found mainly in countries of Eastern Asia.

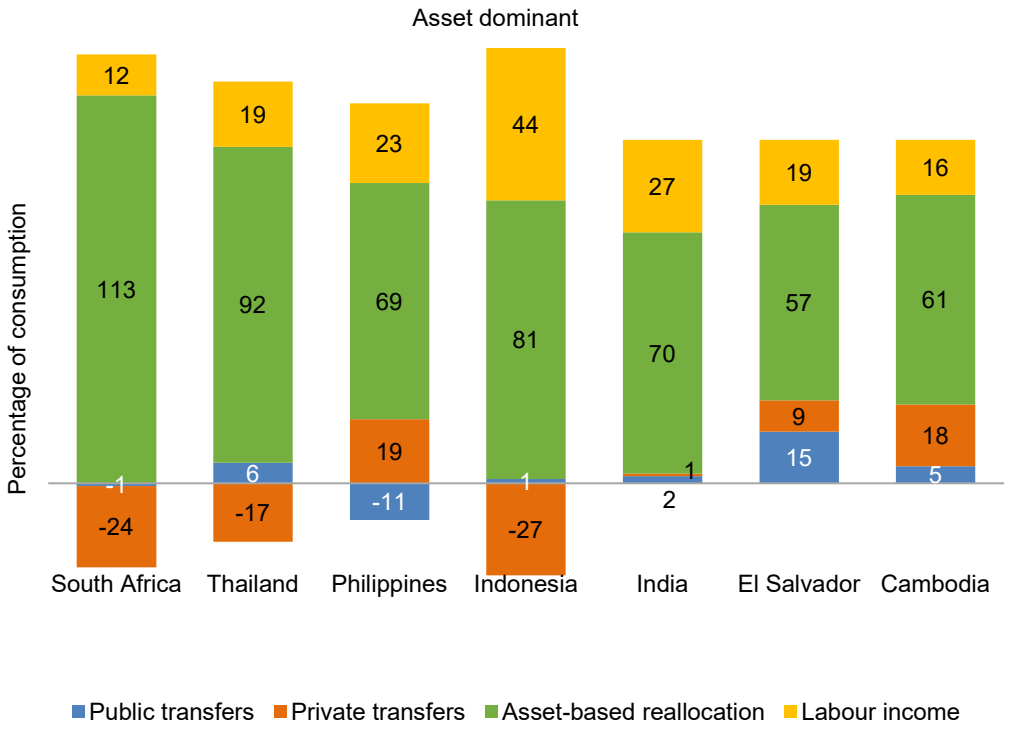
Older persons in Europe and Latin America rely on public transfers to finance more than two thirds of their consumption

In public transfer dominant countries (figure III.3), the contribution of public transfers to finance consumption at older age ranges from slightly more than 50 per cent in the case of Chile and Uruguay to almost 100 per cent in Sweden. Net public transfers, which equal transfer inflows minus outflows, support 70 per cent or more of consumption at older ages in many European countries (Austria, Germany, France, Finland, Hungary, Italy and Sweden). In some countries of Latin America, net public transfers fund about two thirds of consumption at older ages (Costa Rica, Ecuador and Peru). An exception is Brazil, where generous transfer systems for social security and others public benefits finance about 90 per cent of consumption at older ages. However, the rather generous public transfer system in Brazil may change soon because of the ongoing pension reform (Proposed Amendment to the Constitution (PEC)) passed by the Brazilian Government in October 2019.[9] The reform would increase retirement ages for future retirees, which are proposed to rise to 65 years for men and 62 years for women. It would also raise workers' pension contributions and introduce a revised mechanism to calculate benefits.

Figure III.3. Income sources used to finance consumption at ages 65 years and above, public transfer dominant and asset dominant clusters of countries, circa 2005



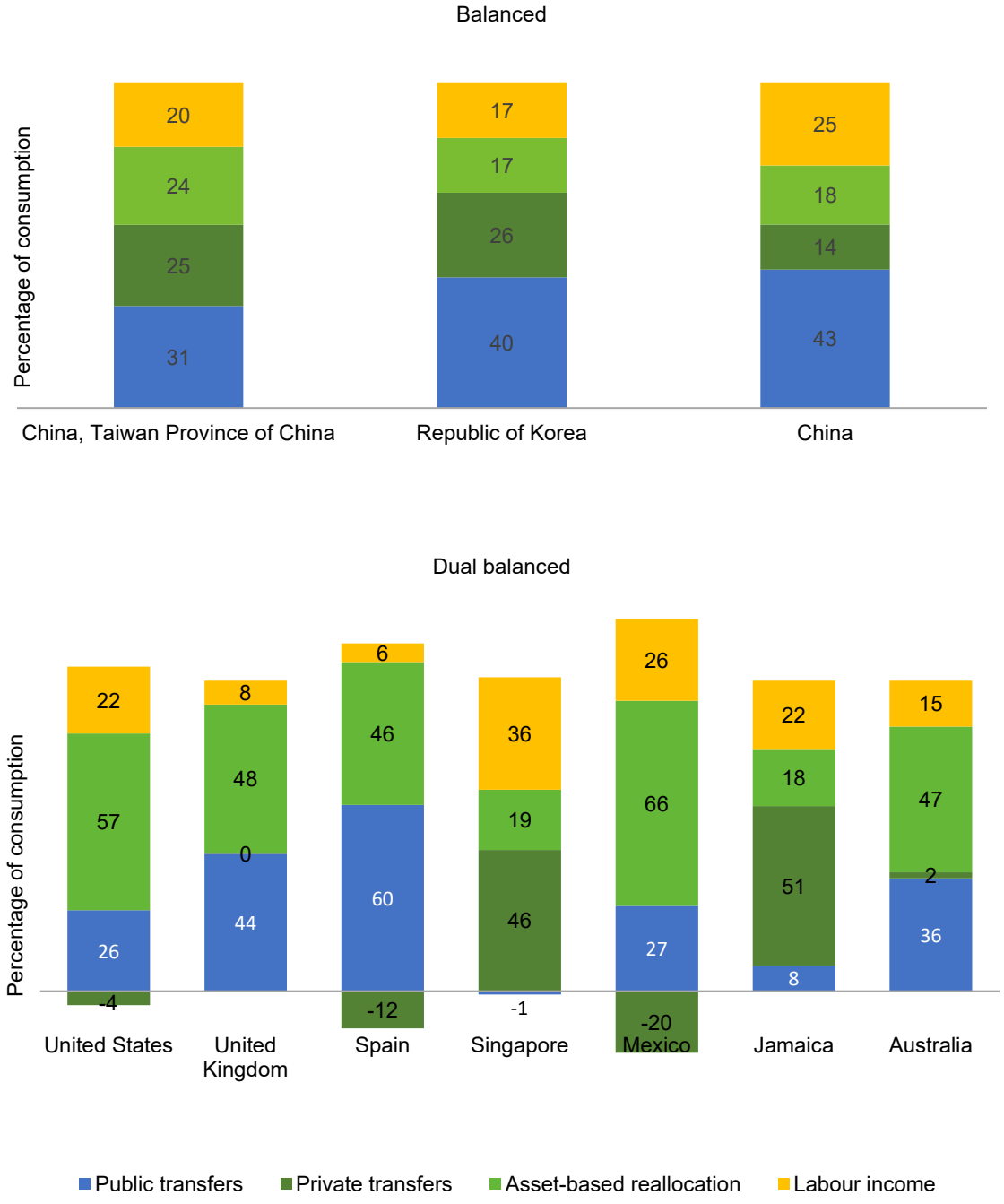
[9] Senado Federal (2019) Proposta de Emenda à Constituição n° 6, de 2019 - Reforma da Previdência; Available from www25.senado.leg.br/web/atividade/materias/-/materia/137999



Source: Computed using data obtained from the NTA database. Available from www.ntaccounts.org. Accessed on 3 June 2019.

Note: Both public and private transfers are net of inflows and outflows. Private transfers include both interhousehold and intrahousehold transfers. Data are based on the latest available year, ranging from 1998-2015.

Figure III.4. Income sources used to finance consumption at ages 65 years and above, balanced and dual balanced clusters of countries, circa 2005



Source: computed using data obtained from the NTA database. Available from www.ntaccounts.org. Accessed on 3 June 2019.

Note: Both public and private transfers are net of inflows and outflows. Private transfers include both interhousehold and intrahousehold transfers. Data are based on the latest available year, ranging from 1998 to 2015. Negative private transfers occur when individuals give private transfers in larger amounts than the transfers they receive.

Assets are the primary source of support for older persons in countries where transfers are low, such as in Southern Asia and South-Eastern Asia

In the asset dominant cluster, countries rely only to a limited extent on transfers and thus assets become the primary source of support at older ages. When public transfer systems are less established and private transfers are limited, individuals need to save and accumulate assets for retirement. This phenomenon is found in several countries in Southern Asia and South-Eastern Asia such as Cambodia, India, Indonesia, the Philippines, and Thailand (figure III.3). In addition, El Salvador and South Africa show a similar pattern.

Assets and public transfers finance the bulk of consumption at older ages in some high-income countries

In some high-income countries in the dual balanced cluster, assets play an important role, while public transfers play a more modest role in funding consumption at older ages. Specifically, assets support about half of the consumption of older persons in Australia, Mexico, Spain, the United Kingdom and the United States (figure III.4). In addition to public transfers and assets, labour income is an important mechanism in this cluster.[10]

Private transfers finance as much as one fourth of the consumption of older persons in Eastern Asia, while such transfers are mostly small or negative in other regions

In the balanced cluster, private or familial transfers play an important secondary role. This pattern is common in Eastern Asia, where the filial obligation to support older parents continues to hold. On average, older persons in the Republic of Korea and in China, Taiwan Province of China have about one fourth (25 per cent) of their consumption financed by their families, while the proportion in China is about 14 per cent (figure III.4). Private transfers are also important in South-Eastern Asia, financing about one fifth of consumption in Cambodia and the Philippines. In Jamaica and Singapore, private transfers are the main sources of income for older persons.

In other regions such as Europe and Northern America, and Latin America and the Caribbean, private transfers play a minimal role in supporting consumption at older ages.[11] In fact, older persons make net contributions to the consumption of younger generations in many countries, including Brazil, Costa Rica, Germany, Indonesia, France, Mexico, Republic of Moldova, Peru, South Africa, Spain, Sweden, Thailand and the United States (figure III.3 and figure III.4).

Labour income is an important third or fourth source that funds about 15 to 25 per cent of consumption among older persons in most countries and regions, except Europe

Labour force participation typically declines as people grow older. However, older populations in Europe are even less likely to be in the labour force than populations in other regions, due to more extensive and generous social security systems (World Bank, 2014). Therefore, it is no surprise that labour income makes a smaller contribution, financing 10 per cent or less of consumption at older ages (figure III.3). By contrast, labour income in other regions makes quite a substantial contribution across all clusters (figure III.3 and figure III.4). Some cases of relatively high labour income at older ages are those of Ecuador, India and Singapore, where roughly one third of consumption is financed through an older person's own work (figure III.3 and figure III.4).

[10] Singapore is a special case with private transfers and labour income as the two main funding mechanisms due to low levels of public transfers and accumulated assets.
[11] The exception is El Salvador and Jamaica, where private transfers are important.

B. Financing consumption at older ages in coming decades: Projecting transfers, assets and work

In countries with low levels of intergenerational transfers, population ageing will put substantial pressure on older persons to be self-reliant

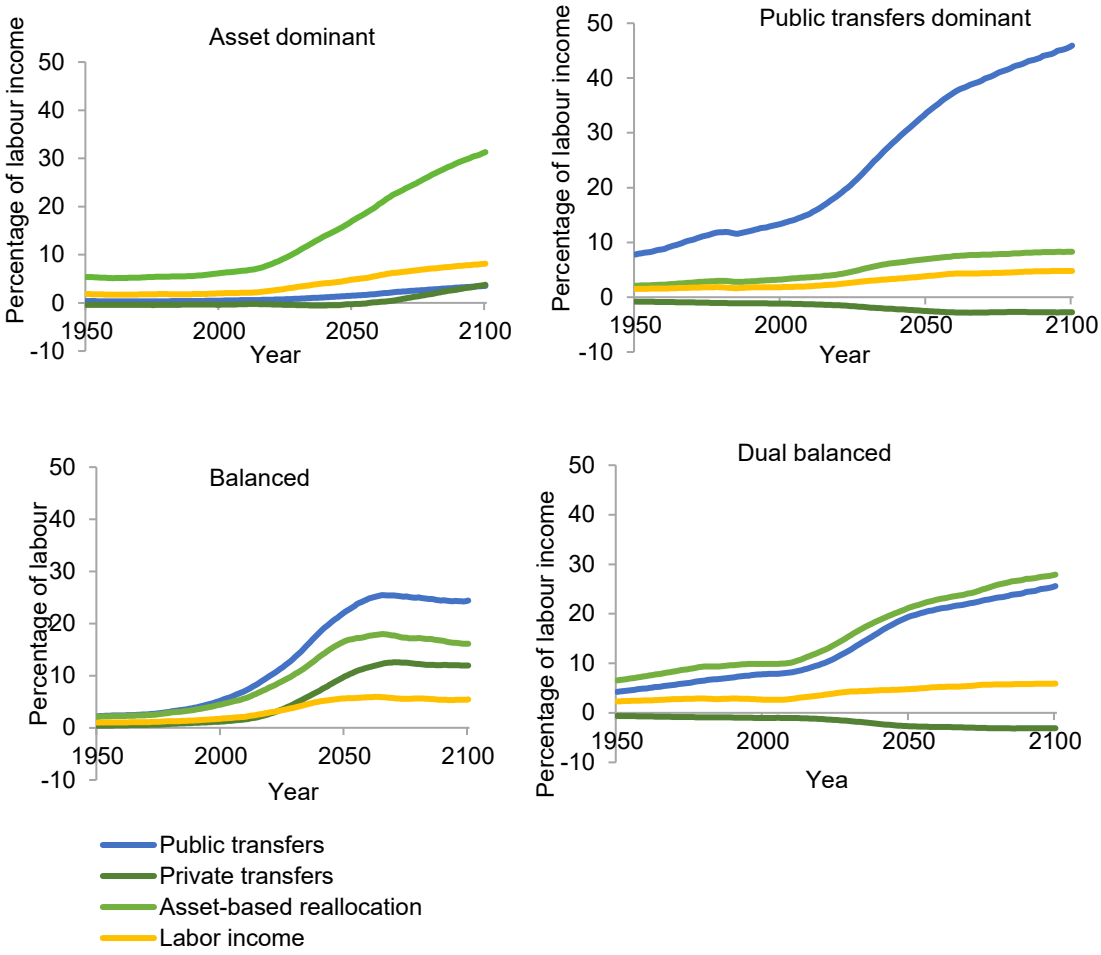
As populations continue to age, countries in the asset dominant cluster (Cambodia, El Salvador, India, Indonesia, Philippines, South Africa and Thailand) are likely to experience increasing asset reallocations to finance consumption at older ages (figure III.5). Relative to labour income across all ages, asset reallocations to ages 65 and above are projected to double from the equivalent of 8 per cent of total labour income in 2019 to 17 per cent in 2050. In addition, labour income will gain importance as a source of financing for consumption at older ages, while the rise in contributions from private and public transfers is projected to be more modest.

In Europe and Latin America, population ageing will test the fiscal sustainability of public transfer systems in the long run

Public transfer systems of countries in the public transfers dominant cluster (Austria, Brazil, Costa Rica, Ecuador, Finland, France, Germany, Hungary, Italy, Peru, Slovenia, Sweden and Uruguay) will face mounting pressure related to their use of public transfers to finance consumption at older ages. As illustrated in figure III.5, public transfers to the older population relative to total labour income are projected nearly to double, from 18 per cent in 2019 to 34 per cent in 2050. Contributions from assets and private transfers will remain relatively small or even negative, at around 7 per cent and -3 per cent,[12] respectively. Policy measures to increase taxes or other (non-tax) public revenues, or to adjust benefits (for example, by raising the effective retirement age), could help to balance the fiscal budget and dampen the potentially adverse macroeconomic impacts of population ageing.

[12] Negative private transfers occur when older persons are giving more than they receive in private transfers to or from persons in other age groups.

Figure III.5. Levels and sources of financing for consumption of persons aged 65 or over as a percentage of total labour income across all ages, 1950-2100 (estimates and projections)



Source: Calculations by Andrew Mason and Ronald Lee using the population estimates and medium-variant projections of World Population Prospects 2019 and the latest available age profiles from the National Transfers Accounts. The method is outlined in Mason and Lee (2018), Intergenerational transfers and the older population.

Note: Asset dominant cluster: Cambodia, El Salvador, India, Indonesia, Philippines, South Africa and Thailand. Public transfers dominant cluster: Austria, Brazil, Costa Rica, Ecuador, Finland, France, Germany, Hungary, Italy, Peru, Slovenia, Sweden and Uruguay. Dual balanced cluster: Australia, Mexico, Spain, United Kingdom and United States. Balanced cluster: China, Japan, Republic of Korea and China, Taiwan Province of China.

In Eastern Asia, where private transfers are important, population ageing will create budgetary pressures for families

Countries or areas in the balanced cluster (China, Republic of Korea, and China, Taiwan Province of China) will continue to rely on all sources to finance consumption at older ages, with public transfers contributing the largest share, followed by assets, private transfers and labour income. Public transfers relative to total labour income across all ages are projected to more than double between 2019 and 2059, rising from 10 per cent to 22 per cent, while the contribution from assets will also double in relation to total labour income, rising from 8 to 17 per cent of the latter (figure III.6). The contribution to consumption at older ages from private transfers is projected to more than triple over the same period, rising from 3 per cent to 10 per cent of total labour income.

In countries where public transfers are moderate, it is projected that public transfers and assets will continue to be the primary sources of financing for consumption at older ages

Countries in the dual balanced cluster (Australia, Mexico, Spain, United Kingdom and United States) have assets and public transfers as the main sources of support for consumption at older ages. In these countries, the levels of consumption among older persons that will be financed by assets and public transfers are projected nearly to double between 2019 and 2050, rising from 12 to 21 per cent and from 10 to 19 per cent, respectively, as a percentage of labour income across all ages (figure III.6).

However, current age profiles of taxes and benefits for public transfer programmes may shift in the coming years due to pension reforms expected in many countries of Europe and Latin America, including increases in the retirement age and other adjustments to pension benefits (European Union 2018; ECLAC 2016). These reforms may lead to a significant shift in the financing of consumption at older ages, which may move away from public programmes and toward a greater reliance on individual labour income, personal savings and family resources. In addition, age profiles of health care and education may shift in some countries due to additional investments as the population ages.

IV. POLICY IMPLICATIONS FOR ACHIEVING THE SUSTAINABLE DEVELOPMENT GOALS

Progress towards the achievement of the SDGs is closely linked to demographic trends. The present analysis has shown that countries or areas throughout the world have reached different stages of population ageing. Forward-looking policies and programmes that consider current and future population dynamics are needed to attain sustainable development as articulated in the 2030 Agenda for Sustainable Development, including to fulfil the pledge that no one will be left behind.

Key policy issues and recommendations include the following:

1. **Population ageing can spur economic growth while maintaining fiscal sustainability, but policies and behaviour play critical roles**. There is no single-best policy response to population ageing in all settings. How countries address population ageing depends on the fiscal space available to implement their tax and benefit programmes, the extent to which societies agree on values of redistribution and intergenerational equity, and the role they assign to government, families and individuals in financing consumption, particularly at older ages.
2. **Promoting gender equality in employment and adopting family-friendly policies can improve labour force participation and lead to more rapid economic growth (SDGs 5 and 8)**. Increasing women's participation in the formal labour market can compensate at least partially for the expected reduction in the relative size of the workforce caused by population ageing. In many countries, cultural, legal and structural barriers prevent women from entering and continuing in the formal workforce at the same levels as men. Policies to enhance female labour force participation include implementing family-friendly programmes such as affordable child-care, paternal and maternal leave, and part-time and flexible employment opportunities for both women and men.
3. **Eliminating age-related discrimination, including age barriers in employment, can reduce inequality, increase productivity and promote economic growth (SDGs 8, 10 and 16)**. Provided that older persons are covered by social protection programmes, ensuring access to employment opportunities for those who want to work is a key policy priority in promoting and protecting the rights and dignity of older persons. Policies in this area include those aimed at eliminating age barriers in the formal labour market, promoting the recruitment of and flexible employment opportunities for older workers, facilitating access to microcredit and providing other incentives for self-employment.
4. **Investing in education, health and well-being for all, including lifelong learning, can improve productivity and sustain economic growth even as the share of working-age population declines (SDGs 3 and 4)**. Public investments in children and youth need to be maintained or increased, including for countries at late stages of the demographic transition, when governments often face rising fiscal pressures for health care and social security systems to support the growing population of older persons. Investments in human capital for all generations, including children and youth, are needed to maintain and strengthen present and future economic prosperity and overall well-being. As employment shifts towards jobs requiring high-level cognitive skills in the digital age, more emphasis will be needed on lifelong learning so that workers can keep up with changes in technology and maintain flexibility in skills.
5. **Promoting retirement savings can improve the financial independence of individuals and increase aggregate capital accumulation (SDGs 3 and 8)**. In many middle- and low-income countries, individuals secure their financial well-being at older ages mainly through their accumulated savings and family transfers. In fostering life-cycle savings, governments should ensure that all persons have an opportunity to access financial products that are safe, properly designed and actuarially fair, starting

at young ages. Enhancing financial literacy, providing incentives for saving and easy or default enrolment schemes can greatly enhance retirement savings.

6. **Adopting social security reforms that account for a widening gap in longevity by socioeconomic status can help to reduce inequality (SDG 10)**. Increasing the retirement age as life expectancy increases is a well-known tool for promoting the fiscal sustainability of pension systems. An increased age of retirement can also support labour force participation at the older working ages. However, when reforming social security systems, it is important to consider the welfare implications of a widening gap in life expectancy by socioeconomic status. Where there is clear evidence of increasing inequality in survival rates at older ages, governments may wish to consider indexing the statutory age of retirement by socioeconomic status, whereby better-educated, higher-income groups that enjoy longer life expectancies are required to pay contributions for longer and to receive full benefits later compared to those with less education and lower incomes.

7. **Establishing universal social protection with adequate benefits is key to reducing poverty and inequality and promoting social inclusion (SDGs 1, 8 and 10)**. Although establishing comprehensive social protection systems require significant investments, the recurrent costs of providing basic social protection floors are affordable in most countries. Universal coverage can be achieved through either contributory or non-contributory schemes, or through a mix of the two, combined with a minimum set of tax-financed schemes available to everyone throughout the life cycle. Special measures tailored to the needs of certain disadvantaged groups may be necessary to ensure effective coverage and sufficient benefits for all.

8. **Promoting lifelong health and preventive care to maintain maximum functional capacity of individuals can improve health and well-being (SDG 3)**. As populations age, it is essential to ensure continued and equitable access to disease prevention, treatment and rehabilitation during all stages of life. Healthy ageing is more than the absence of disease and also entails the maintenance of functional ability throughout the lifespan. Health and long-term care systems need to be aligned to meet the needs of ageing populations by providing age-appropriate integrated care and by focusing on maintaining the intrinsic capacity of older persons.[13]

9. **Fostering a balanced approach to financing consumption at older ages can help to ensure generational equity and fiscal sustainability (SDGs 8 and 10)**. Public policies affect both current and future generations. Current generations bequeath future generations a wealth of tangible assets and knowledge. At the same time, current generations pass on to future generations a responsibility for public debt. Balanced approaches to financing consumption at older ages include a mixture of public transfers, private transfers, work and savings in order to spread the fiscal stress associated with population ageing over time and across institutions.

10. **Improving data collection and analysis of population and economic linkages can provide vital new evidence for policy making (SDG 17)**. Because economic activity varies by age, a large shift in the population age distribution has significant economic effects. To achieve inclusive and sustainable development as societies undergo this fundamental demographic transformation, new types of data must be collected and analysed. National economic data, including those routinely collected on systems of national accounts, should be disaggregated by age, sex and socio-economic status to support evidence-based policies responding to the challenges of population ageing.

[13] Functional capacity is about having the capabilities that enable all people to be and do what they have reason to value. This includes a person's ability to meet their basic needs to learn, grow and make decisions; to be mobile; to build and maintain relationships; and to contribute to society. Intrinsic capacity comprises all mental and physical capacities that a person can draw on and includes their ability to walk, think, see, hear and remember. The level of intrinsic capacity is influenced by several factors such as the presence of diseases, injuries and age-related changes (World Health Organization, 2015).

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ANNEX I. SOURCES, METHODS AND CLASSIFICATIONS

Data on demographic trends used in the present report are drawn from the latest estimates and projections of the global population, as published in World Population Prospects 2019, which contains data for the world and its constituent regions, countries and areas (United Nations, 2019).

These population estimates and projections, which are prepared biennially by the Population Division of the United Nations Department of Economic and Social Affairs, provide a standard and consistent set of population figures that are used throughout the United Nations system as a basis for activities requiring population information. The present report draws on the 2019 medium-variant population projection through the year 2050.

Estimates of the prospective old-age dependency ratio were prepared and contributed by Warren Sanderson and Sergei Scherbov of the International Institute for Applied System Analysis (IIASA) using data from World Population Prospects 2019. Details of the methods used are outlined in Sanderson and Scherbov (2005, 2010 and 2015).

Estimates of the economic dependency ratio were provided by Andrew Mason and Ronald Lee, founding directors of the National Transfer Accounts project (www.ntaccounts.org), using data on age profiles of consumption and labour income for 188 countries and population estimates and projections from World Population Prospects 2019. The construction of National Transfer Accounts is carried out by country teams based in universities, think tanks or government agencies, with coordination provided by an informal network, following a standard methodology outlined in the National Transfer Accounts manual (United Nations, 2013).

Projected trends in support systems for older persons are based on National Transfer Accounts age profiles of asset reallocations, public transfers, private transfers and labour income for 29 countries and the 2019 medium-variant population projections of the United Nations. The methods used for deriving these projections are described in Mason and Lee (2018).

ANNEX II. GLOSSARY OF TERMS

Dependency ratio

The total dependency ratio is the number of persons under age 20 years plus the number aged 65 years or over per 100 persons aged 20-64 years. It is the sum of the child dependency ratio and the old-age dependency ratio.

The child dependency ratio is the number of persons at ages 0 to 19 years per 100 persons aged 20 to 64 years.

The old-age dependency ratio is the number of persons aged 65 years or over per 100 persons aged 20 to 64 years.

The prospective old-age dependency ratio is the number of persons above the age at which the remaining life expectancy is 15 years per 100 persons between age 20 and that age.

The economic old-age dependency ratio is the effective number of consumers aged 65 or over relative to the effective number of workers of all ages (usually expressed per 100).

Growth rate

The population growth rate is the increase (or decrease) in the number of persons in a population during a given period of time, expressed as a percentage of the population size at the beginning of the time period. The average annual growth rate for all ages, as well as for particular age groups, is calculated on the assumption that growth is continuous.

Life expectancy

Life expectancy at a specific age is the number of additional years that a person of that age can expect to live if current mortality levels observed for higher ages continue for the rest of that person's life. Thus, life expectancy at birth is the number of years that today's new-borns would live on average if current age-specific mortality rates were to continue throughout the lifespan of the new-born cohort. Similarly, life expectancy at age 65 is the number of years that persons aged 65 years today would live on average if current age-specific mortality rates for ages above 65 were to continue throughout the remaining lifespan of that cohort.

Median age

The median age of a population is the age that divides a population into two groups of the same size, such that half the total population is younger than this age, and the other half is older.

Sex ratio

The sex ratio is calculated as the number of males per one hundred females in a population. The sex ratio may be calculated for the total population or for a specific age group.

Total fertility rate

The total fertility rate is the average number of live births that a woman would bear over a lifetime if current age-specific fertility rates remained constant throughout her childbearing years (normally, between the ages of 15 and 49 years). Thus, the total fertility rate is a synthetic indicator of the level of fertility at a given time.

ANNEX III. SUMMARY DATA TABLES

Region, development group, country or area	Population aged 65 years or over (thousands)		Percentage aged 65 years or over		Total fertility rate		Life expectancy at birth for year 2010-2015		Life expectancy at age 65 for year 2010-2015		Males per 100 females aged 65 years or over		Males per 100 females aged 80 years or over		Old-age dependency ratio (65+ /20-64)[a]		Prospective old-age dependency ratio[b]		Economic old-age dependency ratio[c]	
	2019	2050	2019	2050	2019	2050	male	female	male	female	2019	2050	2019	2050	2019	2050	2019	2050	2019	2050
WORLD	702,935	1,548,852	9.1	15.9	2.5	2.2	68.5	73.3	15.1	17.8	81.4	84.6	62.8	71.0	15.9	28.4	11.6	17.3	19.5	33.5
Sub-Saharan Africa	31,867	101,395	3.0	4.8	4.6	3.1	56.2	59.5	11.7	13.0	78.6	80.9	65.0	65.0	6.8	9.2	9.5	10.1	7.3	9.6
Northern Africa and Western Asia	29,375	95,802	5.7	12.7	2.9	2.2	70.1	74.7	14.4	16.7	82.7	90.1	65.5	76.5	10.2	22.4	8.7	14.0	11.1	23.8
Central and Southern Asia	119,046	328,097	6.0	13.1	2.4	1.9	66.8	69.4	13.8	14.9	93.4	90.5	84.2	78.7	10.5	21.8	10.9	16.9	13.0	26.0
Eastern and South-Eastern Asia	260,582	572,491	11.2	23.7	1.8	1.8	72.3	77.6	14.7	18.0	83.9	84.2	62.0	69.3	17.8	42.8	12.3	25.5	20.2	48.1
Latin America and the Caribbean	56,411	144,623	8.7	19.0	2.0	1.7	71.2	77.7	16.3	19.1	78.2	79.4	63.8	66.8	14.8	32.8	9.2	16.2	17.0	36.2
Oceania (excluding Australia and New Zealand)	504	1,460	4.2	7.7	3.4	2.6	63.5	66.5	11.8	12.3	87.5	86.6	75.6	77.9	8.1	13.7	11.9	15.7	8.4	14.4
Australia and New Zealand	4,778	8,811	15.9	22.9	1.8	1.7	80.2	84.2	19.3	22.0	88.4	86.7	72.9	76.8	27.1	41.9	13.1	19.2	35.4	56.8
Australia and New Zealand	4,778	8,811	15.9	22.9	1.8	1.7	80.2	84.2	19.3	22.0	88.4	86.7	72.9	76.8	27.1	41.9	13.1	19.2	35.4	56.8
Europe and Northern America	200,372	296,174	18.0	26.1	1.7	1.7	74.5	80.9	16.9	20.0	73.0	81.1	56.4	70.7	30.1	48.7	17.7	24.2	41.8	68.6
Developed regions	240,674	344,867	18.9	26.9	1.6	1.7	75.2	81.6	17.2	20.5	73.9	81.2	56.6	70.1	32.0	50.8	18.0	24.7	45.2	72.6
Less developed regions	462,261	1,203,986	7.2	14.2	2.6	2.2	67.2	71.3	14.1	16.3	85.6	85.6	68.5	71.4	12.6	25.2	10.8	16.7	14.1	27.8
Less developed regions, excluding least developed countries	425,440	1,084,306	7.9	16.5	2.3	2.0	68.5	72.7	14.2	16.5	85.9	86.1	68.1	71.6	13.3	28.8	11.1	18.5	15.0	32.0
Less developed regions, excluding China	292,807	827,477	5.9	11.8	2.8	2.3	65.5	69.6	14.1	16.0	84.0	84.8	69.0	70.8	10.8	20.7	9.8	14.4	13.6	27.3
Least developed countries	36,821	119,680	3.6	6.4	3.9	2.8	60.7	64.2	13.0	14.2	82.7	80.9	72.9	68.6	7.6	11.8	8.8	10.2	8.0	12.3
Land-locked Developing Countries (LLDC)	19,505	59,747	3.7	6.4	3.9	2.7	60.8	64.9	12.8	14.5	76.0	76.9	62.6	59.6	8.0	11.7	9.1	10.3	8.3	12.0
Small island developing States (SIDS)	6,228	14,046	8.7	16.1	2.4	2.1	68.7	73.4	16.0	18.0	83.4	85.2	70.0	74.7	15.2	28.4	10.3	16.5	16.5	30.4
High-income countries	226,626	355,620	18.0	26.9	1.7	1.7	77.5	83.0	18.0	21.4	78.6	86.3	60.3	74.5	30.2	50.5	16.0	23.6	43.8	72.3
Middle-income countries	451,110	1,112,949	7.9	16.1	2.3	2.1	67.8	72.3	13.9	16.3	83.2	84.5	64.9	69.7	13.5	28.1	11.6	18.5	15.1	30.9
Upper-middle-income countries	275,611	630,282	10.4	22.5	1.9	1.8	71.4	76.9	14.3	17.2	81.4	83.4	61.9	69.0	16.7	40.2	12.6	23.7	18.0	43.8
Lower-middle-income countries	175,499	482,667	5.7	11.7	2.7	2.2	65.0	68.5	13.5	15.1	86.1	85.9	70.4	71.2	10.4	20.1	10.8	15.9	12.3	23.1

Region, development group, country or area	Population aged 65 years or over (thousands)		Percentage aged 65 years or over		Total fertility rate		Life expectancy at birth for year 2010-2015		Life expectancy at age 65 for year 2010-2015		Males per 100 females aged 65 years or over		Males per 100 females aged 80 years or over		Old-age dependency ratio (65+ /20-64)[a]		Prospective old-age dependency ratio[b]		Economic old-age dependency ratio[c]	
	2019	2050	2019	2050	2019	2050	male	female	male	female	2019	2050	2019	2050	2019	2050	2019	2050	2019	2050
Low-income countries	24,878	79,558	3.3	5.4	4.4	2.9	59.1	62.9	12.4	14.0	76.1	79.2	61.8	62.9	7.4	10.1	9.1	9.5	7.7	10.3
AFRICA	45,526	143,103	3.5	5.7	4.4	3.0	58.6	61.9	12.4	13.7	80.9	81.9	66.7	68.0	7.6	10.9	9.5	10.4	8.2	11.6
Eastern Africa	12,583	44,066	2.9	5.2	4.3	2.8	59.0	62.9	12.4	13.9	76.1	78.7	64.3	63.0	6.6	9.6	7.9	8.8	6.5	9.5
Burundi	267	999	2.3	3.9	5.3	3.4	57.1	60.7	12.6	13.6	78.9	82.4	62.4	64.3	5.5	7.7	7.4	8.3	5.3	7.4
Comoros	26	84	3.1	5.7	4.1	2.8	61.2	64.5	12.2	13.5	83.7	83.9	68.5	68.6	6.5	10.5	8.9	12.5	6.9	11.1
Djibouti	45	157	4.6	12.1	2.7	1.9	60.0	63.2	13.5	14.5	92.7	94.4	80.5	79.5	8.1	19.9	8.7	16.8	8.7	20.7
Eritrea	158	324	4.5	5.4	4.0	2.7	61.4	65.6	12.3	13.8	78.7	78.7	69.2	60.9	10.3	9.8	12.7	8.8	9.6	9.3
Ethiopia	3,941	12,436	3.5	6.1	4.1	2.4	61.9	65.5	13.8	14.9	85.7	84.6	82.2	69.5	7.9	10.7	8.3	8.4	7.6	10.2
Kenya	1,274	6,156	2.4	6.7	3.4	2.4	60.6	65.2	11.9	13.7	72.4	77.4	54.3	58.9	5.1	11.8	6.0	10.8	5.9	13.7
Madagascar	821	3,044	3.0	5.6	4.0	2.9	63.0	66.0	13.0	13.9	84.4	83.9	80.8	70.1	6.7	10.6	8.2	9.3	6.4	10.0
Malawi	492	1,752	2.6	4.6	4.1	2.8	56.6	62.5	11.1	13.2	66.6	69.9	47.7	48.5	6.2	8.6	8.0	7.9	5.5	7.6
Mauritius*	152	290	12.0	24.5	1.4	1.5	70.7	77.7	14.8	18.2	76.1	77.5	54.6	61.6	19.0	42.5	13.0	25.5	19.7	41.5
Mayotte*	11	48	4.1	9.6	3.6	2.4	76.0	82.9	17.6	21.2	90.8	77.1	76.4	73.6	9.0	17.7	4.9	6.9	..	..
Mozambique	874	2,536	2.9	3.9	4.8	3.0	51.5	56.8	10.4	13.0	60.4	63.2	44.5	41.4	6.9	7.5	9.6	8.5	4.9	5.5
Réunion*	108	246	12.2	24.4	2.2	1.9	76.0	82.9	17.6	21.2	80.1	76.5	57.8	72.2	21.4	46.4	10.0	22.2	..	..
Rwanda	382	1,592	3.0	6.9	4.0	2.5	63.8	67.6	12.8	14.4	70.4	74.7	60.1	63.7	6.5	12.5	7.0	9.1	5.8	11.1
Seychelles	8	21	7.8	20.0	2.4	2.0	69.5	77.0	13.8	17.7	75.6	81.5	43.7	56.1	12.6	36.8	11.0	25.6	..	..
Somalia	446	1,074	2.9	3.1	6.0	3.7	53.3	56.5	12.4	13.3	92.6	81.2	75.3	71.4	7.4	6.4	10.0	7.9	7.9	6.7
South Sudan	374	937	3.4	4.7	4.6	3.0	54.6	57.5	12.7	13.5	85.3	85.2	75.6	73.8	7.6	8.8	9.7	10.5	8.6	9.9
Uganda	869	3,604	2.0	4.0	4.8	2.6	57.7	61.1	11.6	13.2	66.1	73.5	47.5	56.4	4.9	7.3	6.7	8.0	4.4	6.5
United Republic of Tanzania*	1,520	5,839	2.6	4.5	4.8	3.4	58.7	63.1	11.4	13.1	73.2	83.2	55.1	66.6	6.1	9.1	7.9	9.1	6.6	9.9
Zambia	378	1,629	2.1	4.2	4.6	3.3	57.0	61.5	11.2	13.5	64.3	71.8	43.0	50.7	5.0	8.2	6.4	8.5	6.4	10.4
Zimbabwe	437	1,297	3.0	5.4	3.5	2.3	54.9	58.3	10.8	13.3	55.5	64.6	37.8	47.9	6.8	9.6	9.1	11.0	8.3	11.7
Middle Africa	4,817	15,255	2.8	4.0	5.4	3.4	55.4	58.6	12.1	13.1	81.3	84.2	66.3	72.1	6.7	8.0	9.1	9.0	7.0	8.3
Angola	700	2,595	2.2	3.4	5.4	3.8	55.1	60.5	11.1	12.7	80.6	72.1	59.0	56.7	5.4	7.0	8.7	8.6	6.9	8.9
Cameroon	705	2,279	2.7	4.5	4.5	3.1	54.9	57.6	11.2	12.3	80.4	87.2	66.2	73.1	6.2	8.5	9.7	11.4	7.0	9.3

Region, development group, country or area	Population aged 65 years or over (thousands)		Percentage aged 65 years or over		Total fertility rate		Life expectancy at birth for year 2010-2015		Life expectancy at age 65 for year 2010-2015		Males per 100 females aged 65 years or over		Males per 100 females aged 80 years or over		Old-age dependency ratio (65+ /20-64)[a]		Prospective old-age dependency ratio[b]		Economic old-age dependency ratio[c]	
	2019	2050	2019	2050	2019	2050	male	female	male	female	2019	2050	2019	2050	2019	2050	2019	2050	2019	2050
Central African Republic	134	294	2.8	3.5	4.6	2.7	47.3	50.5	10.3	11.8	65.7	74.2	46.6	53.9	6.9	6.5	12.1	9.2	5.3	4.9
Chad	397	1,150	2.5	3.4	5.6	3.4	50.9	53.7	12.1	12.9	83.5	87.7	73.4	73.9	6.3	6.7	9.0	8.4	6.9	7.0
Congo	146	573	2.7	5.4	4.4	3.2	60.5	62.7	11.7	12.8	74.9	83.9	56.6	69.0	6.0	10.5	8.2	12.0	7.3	12.8
Democratic Republic of the Congo	2,618	7,965	3.0	4.1	5.8	3.3	56.7	59.5	12.8	13.7	82.6	87.0	69.0	76.9	7.5	8.2	9.1	8.5	7.1	7.8
Equatorial Guinea	33	92	2.4	3.3	4.4	2.7	55.4	57.8	11.5	12.3	93.2	106.2	82.4	81.1	4.7	5.7	7.2	8.0	5.3	6.2
Gabon	77	283	3.5	7.4	3.9	2.7	61.9	64.8	12.1	13.5	79.2	96.2	58.4	71.7	7.0	13.5	8.5	14.4	8.0	15.3
Sao Tome and Principe	6	24	3.0	6.2	4.3	3.0	66.2	70.8	12.5	14.6	75.8	78.2	52.3	57.1	6.8	12.0	7.9	9.8	7.2	12.4
Northern Africa	13,659	41,708	5.6	11.2	3.2	2.4	69.4	73.0	14.2	15.8	86.2	84.3	69.6	72.7	10.6	20.2	9.9	13.5	11.5	21.5
Algeria	2,821	9,683	6.6	15.9	3.0	2.1	74.4	76.7	17.2	18.0	96.2	93.9	87.9	88.5	11.6	28.3	7.6	13.9	12.2	29.5
Egypt	5,297	15,060	5.3	9.4	3.3	2.5	68.7	73.0	12.8	14.7	81.3	80.5	61.2	61.1	10.1	17.0	11.5	13.5	10.8	17.8
Libya	302	1,394	4.5	16.4	2.2	1.8	68.9	74.9	13.4	15.6	83.2	82.3	69.7	64.5	7.5	27.9	7.8	20.4	9.4	34.4
Morocco	2,663	8,058	7.3	17.5	2.4	1.9	73.7	76.3	14.8	16.7	88.0	82.9	61.1	73.8	12.7	30.5	10.4	17.8	14.2	33.1
Sudan	1,553	4,610	3.6	5.7	4.3	3.1	62.1	65.5	13.8	14.7	86.8	82.0	78.1	74.4	8.0	10.6	8.8	10.4	8.7	11.3
Tunisia	1,005	2,787	8.6	20.2	2.2	1.8	73.4	77.6	14.5	17.1	81.6	81.8	68.5	69.5	14.2	35.8	11.4	19.7	15.7	38.5
Western Sahara	19	115	3.2	11.7	2.4	1.8	66.9	70.3	12.9	14.4	115.7	96.2	97.8	75.3	5.2	18.9	6.5	15.7	..	..
Southern Africa	3,512	8,850	5.3	10.1	2.5	2.0	57.2	63.6	11.2	14.5	64.8	66.6	44.5	42.9	9.3	16.9	12.1	18.5	10.2	17.8
Botswana	101	350	4.4	10.0	2.8	2.1	61.8	67.0	12.6	15.3	67.6	66.7	47.1	47.4	8.3	17.0	7.8	13.8	10.1	19.4
Eswatini	46	107	4.0	6.3	3.0	2.1	47.8	54.0	10.0	15.2	56.6	56.4	28.2	51.0	8.5	10.6	10.9	11.8	8.1	9.6
Lesotho	105	215	4.9	8.1	3.1	2.3	45.2	51.3	9.6	13.7	56.0	68.9	29.9	36.1	9.4	13.9	14.5	17.7	10.8	16.0
Namibia	90	259	3.6	6.5	3.3	2.4	57.7	62.9	11.3	14.2	58.6	66.4	45.4	41.9	7.3	11.4	10.0	12.7	7.8	11.7
South Africa	3,171	7,920	5.4	10.5	2.4	1.9	57.8	64.2	11.2	14.5	65.4	66.7	45.4	42.9	9.4	17.4	12.3	19.2	10.3	18.2
Western Africa	10,955	33,224	2.8	4.2	5.1	3.4	54.1	56.0	11.1	11.6	85.6	86.7	76.9	75.1	6.5	8.2	11.1	11.2	7.7	9.5
Benin	385	1,175	3.3	4.8	4.8	3.3	58.5	61.4	13.2	14.0	74.5	85.8	61.5	74.3	7.4	9.5	8.9	10.0	8.1	10.3
Burkina Faso	489	1,782	2.4	4.1	5.1	3.2	58.0	59.3	11.6	12.2	64.8	83.6	56.5	68.1	5.7	8.1	8.9	9.8	5.4	7.5
Cabo Verde	26	101	4.7	14.8	2.2	1.8	67.9	74.9	12.8	15.7	55.5	83.3	49.2	54.4	8.1	24.4	8.0	16.4	9.1	26.8
Côte d'Ivoire	739	2,039	2.9	4.0	4.6	3.3	53.5	55.9	10.9	11.8	111.6	89.7	90.8	85.7	6.5	7.7	11.4	11.1	7.6	8.7

Region, development group, country or area	Population aged 65 years or over (thousands)		Percentage aged 65 years or over		Total fertility rate		Life expectancy at birth for year 2010-2015		Life expectancy at age 65 for year 2010-2015		Males per 100 females aged 65 years or over		Males per 100 females aged 80 years or over		Old-age dependency ratio (65+ /20-64)[a]		Prospective old-age dependency ratio[b]		Economic old-age dependency ratio[c]	
	2019	2050	2019	2050	2019	2050	male	female	male	female	2019	2050	2019	2050	2019	2050	2019	2050	2019	2050
Gambia	60	191	2.6	3.9	5.2	3.1	59.1	61.6	11.5	12.4	95.1	78.5	87.0	66.1	6.0	7.4	9.1	9.6	5.4	6.8
Ghana	942	3,351	3.1	6.4	3.8	2.8	60.9	62.7	11.9	12.6	85.0	88.5	76.2	75.8	6.3	11.7	9.6	14.1	7.2	12.6
Guinea	376	1,021	2.9	3.9	4.6	3.0	57.5	58.4	11.5	12.0	61.1	68.8	62.5	54.9	7.0	7.4	10.9	9.6	8.9	8.6
Guinea-Bissau	55	158	2.9	4.4	4.4	2.9	53.6	58.2	10.8	12.3	62.5	73.7	50.9	57.6	6.4	8.2	10.8	11.5	5.7	7.4
Liberia	162	516	3.3	5.5	4.2	2.9	59.2	62.2	12.0	13.0	80.4	87.7	73.8	74.9	7.3	10.4	9.2	11.2	7.8	11.0
Mali	490	1,547	2.5	3.5	5.8	3.4	55.6	56.9	11.9	11.9	78.6	89.2	80.4	79.9	6.4	7.2	9.6	9.3	7.3	8.2
Mauritania	143	502	3.2	5.6	4.5	3.3	61.4	65.0	12.5	13.8	74.0	85.9	61.9	69.0	6.7	10.6	8.7	11.9	7.6	11.4
Niger	605	1,776	2.6	2.7	6.8	4.1	58.1	60.3	12.2	12.9	94.7	78.2	74.8	73.2	7.1	6.0	9.9	6.8	10.1	8.3
Nigeria	5,513	15,906	2.7	4.0	5.3	3.4	51.2	52.8	10.5	10.8	89.9	91.4	85.3	82.6	6.4	7.9	12.4	12.2	7.8	9.4
Senegal	505	1,732	3.1	5.2	4.6	3.2	63.8	67.5	12.4	13.7	72.2	67.1	66.8	51.6	7.1	10.0	9.0	9.4	8.0	10.8
Sierra Leone	230	637	2.9	4.9	4.2	2.5	50.5	52.3	10.7	12.0	74.6	83.3	63.5	63.3	6.5	8.7	11.3	12.3	8.0	9.9
Togo	233	790	2.9	5.1	4.3	3.0	58.3	59.8	11.5	12.0	84.4	86.9	76.6	75.4	6.4	9.7	10.2	12.9	6.9	10.6
ASIA	395,344	954,681	8.6	18.0	2.1	1.9	69.8	74.0	14.4	17.0	86.5	86.9	67.4	72.0	14.3	31.2	11.4	19.9	16.7	35.1
Central Asia	3,791	11,606	5.2	11.6	2.7	2.2	66.2	72.9	12.2	15.0	67.0	70.9	50.5	48.2	9.1	20.1	9.8	16.6	9.7	21.1
Kazakhstan	1,420	3,398	7.7	14.1	2.7	2.1	64.3	73.9	11.5	15.4	55.0	65.4	40.9	44.0	13.3	25.2	11.5	17.2	13.8	26.4
Kyrgyzstan	295	920	4.6	10.1	3.0	2.3	66.4	74.3	12.4	15.7	60.8	63.5	41.1	28.9	8.3	17.7	10.7	15.7	8.9	18.5
Tajikistan	288	1,216	3.1	7.5	3.6	2.6	67.2	71.8	12.0	13.9	86.7	77.1	75.5	57.4	6.0	14.1	8.1	12.1	6.2	14.2
Turkmenistan	273	843	4.6	10.6	2.7	2.1	63.9	70.8	12.8	15.3	69.5	68.5	55.0	50.1	8.1	18.0	9.2	17.5	10.5	22.5
Uzbekistan	1,516	5,229	4.6	12.2	2.4	1.9	67.8	72.7	12.6	14.7	77.1	75.0	60.1	54.2	7.8	20.3	9.3	18.3	8.4	21.1
Eastern Asia	215,204	439,987	12.9	27.2	1.7	1.7	73.9	78.9	14.8	18.3	85.5	86.2	62.8	70.8	20.0	50.2	13.4	29.3	23.4	59.2
China*	164,487	365,636	11.5	26.1	1.7	1.8	73.1	77.5	13.9	16.8	88.5	87.5	67.1	72.3	17.7	47.5	13.9	29.5	18.7	53.0
China, Hong Kong SAR*	1,301	2,789	17.5	34.7	1.4	1.7	80.5	86.4	19.1	23.7	87.2	60.7	68.3	58.4	26.3	70.5	10.6	26.6	41.8	129.1
China, Macao SAR*	72	242	11.2	28.9	1.2	1.6	80.3	86.2	18.8	22.9	91.5	71.7	58.6	55.8	15.8	53.1	5.6	21.0	26.3	94.1
China, Taiwan Province of China*	3,594	7,841	15.1	35.0	1.2	1.5	76.4	82.3	17.9	20.6	85.7	85.1	80.3	78.5	22.7	70.7	11.1	29.0	26.9	81.7
Dem. People's Republic of Korea	2,376	5,232	9.3	19.7	1.9	1.8	67.2	74.1	11.2	16.2	53.3	67.4	26.2	43.6	14.6	33.9	16.3	25.6	14.9	32.5
Japan	35,524	39,882	28.0	37.7	1.4	1.6	80.0	86.5	19.0	23.9	77.2	81.0	56.2	64.9	51.0	80.7	21.8	31.5	77.7	126.5

Region, development group, country or area	Population aged 65 years or over (thousands)		Percentage aged 65 years or over		Total fertility rate		Life expectancy at birth for year 2010-2015		Life expectancy at age 65 for year 2010-2015		Males per 100 females aged 65 years or over		Males per 100 females aged 80 years or over		Old-age dependency ratio (65+ /20-64)[a]		Prospective old-age dependency ratio[b]		Economic old-age dependency ratio[c]	
	2019	2050	2019	2050	2019	2050	male	female	male	female	2019	2050	2019	2050	2019	2050	2019	2050	2019	2050
Mongolia	135	534	4.2	12.0	2.9	2.2	64.5	72.7	12.2	15.2	70.6	66.3	52.9	45.1	7.2	21.0	8.3	16.6	7.5	22.3
Republic of Korea	7,715	17,830	15.1	38.1	1.1	1.4	77.9	84.4	17.4	21.8	75.3	82.7	48.8	66.7	22.4	78.8	11.2	33.7	26.0	88.7
South-Eastern Asia	45,378	132,504	6.9	16.7	2.2	1.9	68.2	74.3	14.0	17.0	76.7	78.1	58.1	62.8	11.5	28.7	9.4	18.4	12.1	29.7
Brunei Darussalam	23	107	5.2	21.7	1.8	1.6	73.8	76.2	16.0	16.5	95.0	99.6	88.5	92.9	8.1	37.6	5.7	21.2	9.6	44.1
Cambodia	778	2,553	4.7	11.7	2.5	1.9	65.5	69.5	13.0	14.0	65.5	74.7	60.5	59.0	8.5	19.9	9.8	15.0	8.0	19.5
Indonesia	16,374	52,494	6.1	15.9	2.3	1.9	67.9	72.2	12.8	15.3	83.5	81.2	59.9	64.2	10.2	27.3	10.5	20.0	10.5	26.9
Lao People's Democratic Republic	299	987	4.2	10.4	2.6	1.8	63.7	67.3	12.5	13.9	79.5	80.5	66.8	62.5	7.8	17.0	9.7	15.8	6.8	14.5
Malaysia*	2,211	6,893	6.9	17.0	2.0	1.7	73.0	77.2	15.5	16.6	95.0	95.7	95.6	91.3	11.4	28.2	8.5	14.9	12.6	30.6
Myanmar	3,249	8,204	6.0	13.2	2.1	1.8	61.3	68.0	12.0	14.0	67.7	68.9	53.8	50.3	10.2	21.7	13.1	22.6	11.4	23.4
Philippines	5,746	17,045	5.3	11.8	2.5	2.0	66.2	74.6	13.1	17.8	72.2	70.0	49.8	47.2	9.7	19.9	8.0	13.9	12.3	24.8
Singapore	719	2,132	12.4	33.3	1.2	1.4	80.1	84.5	18.6	21.9	90.9	96.5	62.8	88.4	17.6	63.2	6.3	26.1	21.4	75.8
Thailand	8,638	19,546	12.4	29.6	1.5	1.5	71.6	78.9	16.7	19.4	77.4	76.3	65.4	65.9	19.3	55.3	10.9	28.3	20.1	56.6
Timor-Leste	55	131	4.3	6.5	3.9	2.3	65.9	69.5	12.7	14.1	86.9	84.6	69.0	69.9	9.2	11.2	11.0	10.2	12.5	14.7
Viet Nam	7,286	22,412	7.6	20.4	2.1	1.9	70.8	79.1	15.9	19.7	64.7	76.5	48.1	61.2	12.1	36.1	7.4	18.2	11.3	35.4
Southern Asia	115,255	316,491	6.0	13.2	2.4	1.9	66.8	69.2	13.9	14.9	94.4	91.3	85.8	80.1	10.6	21.9	10.9	16.9	13.2	26.1
Afghanistan	995	3,506	2.6	5.4	4.3	2.2	60.9	63.8	12.2	13.5	86.5	90.1	76.2	73.1	6.1	9.2	8.2	10.0	5.9	8.4
Bangladesh	8,446	30,445	5.2	15.8	2.0	1.6	69.4	72.4	14.6	16.4	101.9	87.5	87.3	77.8	8.9	25.8	8.1	14.6	9.3	26.6
Bhutan	47	143	6.1	15.8	2.0	1.6	69.2	69.6	16.7	16.9	121.8	116.7	113.0	103.7	10.3	24.8	7.3	11.4	11.6	27.0
India	87,149	225,428	6.4	13.8	2.2	1.8	66.7	69.0	13.8	14.8	93.1	92.1	81.8	80.0	11.0	22.5	11.5	18.1	14.1	27.7
Iran (Islamic Republic of)	5,272	20,788	6.4	20.2	2.1	1.9	74.0	76.2	15.1	15.6	105.9	94.1	131.7	85.4	10.2	35.7	9.3	19.6	14.1	47.2
Maldives	19	122	3.6	20.9	1.8	1.7	75.5	78.5	15.4	17.1	109.7	143.4	114.7	92.2	5.1	34.4	4.1	11.4	7.9	52.6
Nepal	1,654	4,538	5.8	12.8	1.9	1.6	67.3	70.0	13.0	14.3	83.5	64.8	80.7	61.6	10.8	19.8	12.4	15.7	12.8	23.8
Pakistan	9,361	26,595	4.3	7.9	3.5	2.3	65.1	67.0	14.1	14.3	103.7	95.3	110.2	90.9	8.5	13.5	9.6	13.7	9.2	14.2
Sri Lanka	2,311	4,925	10.8	22.6	2.2	1.9	72.4	79.3	15.1	18.2	73.6	73.9	61.3	64.3	18.9	42.5	13.7	23.7	19.9	44.7
Western Asia	15,716	54,094	5.7	14.1	2.6	2.1	70.7	76.3	14.6	17.5	79.7	94.8	62.6	79.4	9.9	24.3	7.8	14.4	10.8	25.9
Armenia	340	602	11.5	21.4	1.8	1.8	70.6	77.0	14.1	16.7	64.5	59.7	56.2	44.2	18.5	37.4	16.4	23.8	19.8	38.9

Region, development group, country or area	Population aged 65 years or over (thousands)		Percentage aged 65 years or over		Total fertility rate		Life expectancy at birth for year 2010-2015		Life expectancy at age 65 for year 2010-2015		Males per 100 females aged 65 years or over		Males per 100 females aged 80 years or over		Old-age dependency ratio (65+ /20-64)[a]		Prospective old-age dependency ratio[b]		Economic old-age dependency ratio[c]	
	2019	2050	2019	2050	2019	2050	male	female	male	female	2019	2050	2019	2050	2019	2050	2019	2050	2019	2050
Azerbaijan*	648	1,937	6.4	17.5	2.1	1.8	68.6	74.6	13.2	16.0	71.8	74.7	55.7	54.2	10.1	29.3	10.5	23.2	10.9	30.7
Bahrain	41	300	2.5	12.9	2.0	1.6	75.6	77.5	15.0	16.0	118.7	146.0	83.5	122.7	3.4	18.8	3.0	12.0	4.0	21.7
Cyprus*	168	352	14.0	26.0	1.3	1.5	77.7	82.2	16.4	19.4	83.8	84.5	65.6	74.1	22.3	45.8	14.6	21.9	24.1	45.2
Georgia*	602	766	15.1	21.8	2.1	1.9	67.8	76.8	12.8	16.5	59.5	62.2	46.0	43.9	25.3	39.8	23.6	28.1	31.4	48.8
Iraq	1,336	5,021	3.4	7.1	3.6	2.6	67.2	71.6	12.9	14.9	81.1	81.9	65.1	59.2	7.1	12.8	7.8	11.5	7.7	13.5
Israel	1,040	2,109	12.2	16.6	3.0	2.4	80.0	83.7	19.0	21.2	80.6	90.0	65.1	80.9	23.4	31.3	11.3	13.8	33.2	45.7
Jordan	393	1,532	3.9	11.8	2.7	1.9	72.2	75.5	14.2	16.2	88.0	91.3	80.6	74.0	7.4	20.0	7.2	13.9	8.0	20.5
Kuwait	116	1,064	2.8	19.7	2.1	1.9	74.1	75.9	13.4	14.0	163.2	147.3	123.8	143.8	3.9	34.3	5.1	29.0	4.5	38.5
Lebanon	499	1,367	7.3	20.9	2.1	1.8	76.9	80.6	16.3	19.3	84.3	92.4	67.5	98.9	12.4	36.7	8.4	18.9	13.1	36.6
Oman	122	889	2.4	12.9	2.8	1.9	74.5	78.7	15.6	18.1	92.5	156.5	92.2	162.0	3.5	19.4	2.2	8.0	4.2	24.1
Qatar	43	546	1.5	14.2	1.8	1.6	78.3	81.1	16.5	19.2	241.7	254.1	91.8	305.9	1.9	19.8	0.9	8.1	2.3	23.3
Saudi Arabia	1,169	7,681	3.4	17.2	2.3	1.7	73.1	76.0	13.9	15.9	113.7	135.5	87.0	152.0	5.2	28.2	5.2	19.0	6.0	32.4
State of Palestine*	158	667	3.2	7.6	3.6	2.4	71.4	74.9	13.9	15.9	88.7	86.1	71.1	65.5	6.6	13.2	6.5	9.2	7.5	14.5
Syrian Arab Republic	801	4,472	4.7	13.5	2.8	2.0	64.4	76.3	13.9	16.8	84.1	83.3	74.3	68.9	8.5	23.0	7.5	13.7	10.5	27.9
Turkey	7,280	20,268	8.7	20.9	2.1	1.7	72.5	78.7	15.3	18.8	73.6	82.2	58.5	65.7	14.8	37.0	10.0	17.9	14.2	32.8
United Arab Emirates	113	1,679	1.2	16.1	1.4	1.4	76.1	78.2	16.0	16.8	193.3	268.6	139.1	305.6	1.4	25.2	1.0	15.6	1.7	30.3
Yemen	846	2,842	2.9	5.9	3.7	2.1	64.3	67.7	12.2	13.9	83.3	83.2	68.4	58.4	6.2	9.9	8.2	11.8	7.1	10.9
EUROPE	140,410	199,895	18.8	28.1	1.6	1.7	73.6	80.7	16.4	19.7	69.6	78.1	53.1	66.4	31.3	53.7	19.2	27.1	41.5	72.7
Eastern Europe	48,187	66,139	16.4	25.2	1.7	1.8	67.2	77.1	13.3	17.5	55.0	65.6	38.1	47.8	26.5	46.6	20.6	27.8	30.9	55.4
Belarus	1,437	2,072	15.2	24.0	1.7	1.8	66.8	77.9	12.3	17.5	48.5	60.5	30.0	39.6	24.1	43.5	20.1	27.7	24.9	45.9
Bulgaria	1,488	1,542	21.3	28.6	1.6	1.7	70.8	77.8	14.0	17.3	67.3	76.3	54.2	59.2	35.6	54.6	30.1	36.2	39.5	61.8
Czechia	2,117	3,043	19.8	28.9	1.7	1.8	75.1	81.2	15.6	19.1	73.1	88.4	52.0	75.7	33.0	55.9	20.9	27.9	43.6	76.6
Hungary	1,907	2,371	19.7	28.0	1.5	1.7	71.6	78.7	14.3	18.1	61.0	74.3	40.9	57.4	32.4	52.6	22.5	30.0	43.8	72.2
Poland	6,864	10,364	18.1	31.1	1.4	1.6	73.1	81.1	15.5	19.8	65.4	79.3	45.3	63.3	29.2	60.3	16.1	25.9	41.4	88.0
Republic of Moldova*	486	774	12.0	23.0	1.3	1.5	66.7	75.2	11.8	15.8	59.2	62.0	40.7	35.8	17.9	38.5	19.4	30.4	20.1	42.8
Romania	3,639	4,498	18.8	27.7	1.6	1.7	71.5	78.4	14.6	17.8	66.8	76.4	53.1	62.3	31.1	52.2	23.5	32.9	30.7	52.5

Region, development group, country or area	Population aged 65 years or over (thousands)		Percentage aged 65 years or over		Total fertility rate		Life expectancy at birth for year 2010-2015		Life expectancy at age 65 for year 2010-2015		Males per 100 females aged 65 years or over		Males per 100 females aged 80 years or over		Old-age dependency ratio (65+ /20-64)[a]		Prospective old-age dependency ratio[b]		Economic old-age dependency ratio[c]	
	2019	2050	2019	2050	2019	2050	male	female	male	female	2019	2050	2019	2050	2019	2050	2019	2050	2019	2050
Russian Federation	22,019	31,048	15.1	22.9	1.8	1.8	64.5	76.0	12.7	17.2	49.2	58.8	33.0	39.9	24.3	41.7	19.3	26.1	27.3	47.5
Slovakia	883	1,438	16.2	28.9	1.5	1.7	72.5	79.8	14.6	18.4	65.4	79.6	44.5	62.3	25.5	54.6	17.3	29.0	37.1	83.4
Ukraine*	7,349	8,988	16.7	25.5	1.4	1.6	65.8	75.9	12.2	16.4	50.3	59.6	35.7	38.3	26.6	45.9	25.7	33.1	28.6	49.0
Northern Europe	19,845	29,240	18.8	25.4	1.7	1.8	78.2	82.6	18.0	20.7	82.4	88.7	64.8	79.7	32.2	47.3	18.5	23.2	47.6	72.2
Channel Islands*	30	56	17.6	28.1	1.5	1.6	79.8	84.1	18.1	21.7	83.8	87.1	63.8	75.2	28.4	52.9	14.9	24.6	..	..
Denmark*	1,152	1,514	20.0	24.2	1.8	1.8	78.1	82.2	17.5	20.2	85.6	88.7	65.4	80.9	34.6	44.6	20.3	24.3	53.4	72.9
Estonia	265	333	20.0	28.7	1.6	1.7	71.9	81.2	14.9	19.8	52.7	75.7	35.4	57.1	33.9	54.9	21.0	27.4	50.5	86.0
Finland*	1,225	1,512	22.1	27.6	1.5	1.6	77.7	83.7	17.7	21.4	78.5	84.8	56.2	71.8	39.2	51.4	19.2	24.5	57.2	80.3
Iceland	52	95	15.2	25.2	1.7	1.7	80.6	83.8	19.0	21.1	91.3	93.3	72.6	82.5	25.8	46.2	13.2	21.7	40.4	74.6
Ireland	694	1,511	14.2	26.6	1.8	1.7	78.7	82.5	17.9	20.4	88.8	89.0	70.8	82.6	24.4	50.6	12.5	22.0	36.7	78.4
Latvia	388	411	20.3	27.8	1.7	1.8	69.0	78.8	13.8	18.8	49.2	63.1	33.6	46.4	34.5	53.0	24.6	30.5	47.7	76.8
Lithuania	556	615	20.2	29.0	1.7	1.8	68.5	79.3	14.1	19.0	51.1	61.7	37.9	47.1	33.5	55.7	21.8	31.5	51.8	88.2
Norway*	929	1,581	17.3	24.0	1.7	1.7	79.5	83.6	18.3	21.2	86.4	95.8	63.1	84.2	29.1	43.4	15.4	21.2	45.4	69.3
Sweden	2,027	2,800	20.2	24.6	1.8	1.8	80.0	83.8	18.6	21.2	86.8	93.1	66.4	83.2	35.5	45.5	19.2	22.4	52.2	72.8
United Kingdom*	12,499	18,775	18.5	25.3	1.7	1.8	78.9	82.7	18.3	20.8	84.8	89.7	68.9	82.0	31.7	47.1	18.5	23.0	46.5	70.6
Southern Europe	32,111	47,859	21.1	35.0	1.4	1.5	78.5	83.8	18.0	21.4	76.5	82.8	59.7	70.2	35.1	71.7	19.7	32.8	44.2	90.2
Albania	409	617	14.2	25.4	1.6	1.5	75.2	80.0	16.1	18.4	92.3	88.3	84.9	79.0	23.2	43.8	16.7	27.2	28.1	49.0
Bosnia and Herzegovina	568	816	17.2	30.4	1.3	1.4	74.1	78.9	14.7	17.4	74.2	82.9	60.0	67.7	27.4	56.5	20.9	32.8	34.2	66.6
Croatia	862	1,039	20.9	30.9	1.4	1.6	74.2	80.6	15.2	18.7	67.0	80.0	45.7	64.6	35.0	59.2	25.0	32.0	50.2	85.1
Greece	2,298	3,271	21.9	36.2	1.3	1.5	78.5	83.7	18.4	21.2	79.6	85.4	70.4	75.7	37.1	75.0	20.9	32.2	51.2	104.0
Italy	13,934	19,585	23.0	36.0	1.3	1.5	79.9	84.7	18.6	22.0	76.9	83.9	59.2	71.8	39.0	74.4	20.9	34.6	50.1	97.5
Malta	92	130	20.8	30.4	1.5	1.7	79.4	83.3	18.3	20.9	83.7	95.0	60.0	82.5	34.7	58.0	17.5	24.9	50.5	92.3
Montenegro	97	140	15.4	23.8	1.7	1.7	73.6	78.5	14.6	17.2	74.2	79.7	61.1	66.9	25.6	42.8	21.3	26.3	31.3	51.0
North Macedonia	293	476	14.1	25.7	1.5	1.6	73.1	77.2	14.0	16.0	80.4	85.6	65.8	71.8	22.1	45.4	20.1	30.8	..	..
Portugal	2,286	3,162	22.4	34.8	1.3	1.6	77.4	83.7	17.6	21.3	72.3	75.5	57.0	63.3	37.8	71.4	21.1	33.2	43.9	79.8
Serbia*	1,644	1,887	18.7	26.6	1.4	1.6	72.1	77.4	13.8	16.4	75.5	78.2	60.9	63.0	31.3	47.9	27.1	31.6	35.4	53.0

Region, development group, country or area	Population aged 65 years or over (thousands)		Percentage aged 65 years or over		Total fertility rate		Life expectancy at birth for year 2010-2015		Life expectancy at age 65 for year 2010-2015		Males per 100 females aged 65 years or over		Males per 100 females aged 80 years or over		Old-age dependency ratio (65+ /20-64)[a]		Prospective old-age dependency ratio[b]		Economic old-age dependency ratio[c]	
	2019	2050	2019	2050	2019	2050	male	female	male	female	2019	2050	2019	2050	2019	2050	2019	2050	2019	2050
Slovenia	420	623	20.2	32.1	1.6	1.7	77.1	83.1	17.0	20.8	75.2	89.4	49.5	73.2	33.5	65.0	18.5	30.3	46.7	92.9
Spain*	9,183	16,062	19.6	36.8	1.3	1.6	79.6	85.3	18.7	22.6	76.8	82.6	59.1	68.9	32.2	78.4	16.9	31.8	37.8	92.8
Western Europe	40,267	56,658	20.6	28.8	1.7	1.7	78.4	83.7	18.1	21.6	78.0	84.8	59.9	75.0	35.3	55.7	19.4	27.3	52.7	85.0
Austria	1,708	2,684	19.1	29.4	1.5	1.7	78.4	83.5	18.0	21.2	76.7	87.1	59.0	78.8	31.0	56.0	18.7	27.8	40.4	74.6
Belgium	2,193	3,290	19.0	26.9	1.7	1.8	78.0	83.0	17.7	21.1	78.2	89.1	59.1	79.5	32.5	51.3	18.0	24.8	50.5	82.0
France*	13,281	18,810	20.4	27.8	1.8	1.8	78.7	85.0	19.0	23.0	75.8	78.7	56.5	67.1	36.5	54.5	17.0	24.7	54.5	81.6
Germany	18,009	24,040	21.6	30.0	1.6	1.7	77.9	82.9	17.6	20.8	78.0	87.2	61.6	78.3	36.1	58.1	21.9	29.6	54.4	89.2
Luxembourg	88	194	14.3	24.5	1.4	1.6	78.8	83.5	18.0	21.3	83.1	93.8	61.5	85.0	22.2	43.8	12.3	20.6	35.1	71.9
Netherlands*	3,352	4,806	19.6	28.0	1.7	1.7	79.4	83.1	17.9	21.1	86.1	90.5	64.6	83.7	33.5	53.3	17.9	28.0	50.4	85.4
Switzerland	1,618	2,813	18.8	28.6	1.5	1.6	80.5	84.7	19.1	22.2	82.1	89.3	62.9	80.2	30.8	54.4	15.5	25.0	47.7	88.0
LATIN AMERICA AND THE CARIBBEAN	56,411	144,623	8.7	19.0	2.0	1.7	71.2	77.7	16.3	19.1	78.2	79.4	63.8	66.8	14.8	32.8	9.2	16.2	17.0	36.2
Caribbean	4,495	8,923	10.4	18.8	2.2	1.8	69.1	74.2	16.6	18.8	82.2	81.2	71.3	71.1	18.1	33.1	11.7	18.7	19.5	35.0
Antigua and Barbuda	9	23	9.1	20.8	2.0	1.8	74.8	77.4	16.5	16.8	85.6	79.3	79.0	78.2	14.7	37.0	10.9	22.6	..	..
Aruba*	15	24	14.1	22.3	1.9	1.8	72.9	77.8	14.3	17.4	73.4	65.1	53.6	51.7	22.9	40.5	18.3	28.8	..	..
Bahamas	29	82	7.5	17.6	1.7	1.7	70.1	74.8	14.4	16.3	77.4	73.4	68.1	63.9	12.1	29.5	10.3	21.2	14.9	35.2
Barbados	47	77	16.2	27.7	1.6	1.7	77.1	80.0	19.6	20.6	79.1	85.4	69.1	80.2	27.0	52.7	14.0	26.3	28.2	52.4
Cuba	1,764	3,032	15.6	29.8	1.6	1.6	76.5	80.4	17.3	19.6	84.0	87.2	73.3	77.2	24.9	56.3	15.3	31.5	24.7	54.5
Curaçao*	28	43	17.2	24.7	1.7	1.7	74.5	80.7	17.2	19.9	71.1	67.6	61.5	60.3	29.8	45.3	16.2	24.6	..	..
Dominican Republic	784	2,050	7.3	16.0	2.3	1.8	69.6	75.9	16.5	18.9	87.8	81.6	79.3	68.9	13.0	27.6	7.5	14.2	13.0	26.5
Grenada	11	19	9.7	16.7	2.0	1.7	70.3	75.2	13.6	16.5	83.5	78.6	63.3	60.1	16.2	27.9	16.6	21.0	..	..
Guadeloupe*	75	110	18.8	28.4	2.1	1.9	76.8	84.0	18.5	22.4	73.8	58.1	60.1	56.3	34.1	58.0	14.6	29.5	..	..
Haiti	570	1,500	5.1	10.1	2.9	2.1	59.3	63.5	13.6	15.1	79.8	79.3	67.7	66.4	9.7	17.0	9.3	14.3	10.9	19.2
Jamaica	263	547	8.9	18.5	2.0	1.7	72.5	75.5	16.2	16.5	94.4	79.5	90.4	80.0	15.1	31.5	12.3	20.8	16.1	33.5
Martinique*	79	108	21.0	32.5	1.9	1.8	77.8	84.4	18.3	22.4	73.9	59.3	61.0	55.0	37.3	68.3	17.6	35.8	..	..
Puerto Rico*	578	798	19.7	32.6	1.2	1.4	75.4	82.7	18.2	21.6	70.6	74.1	59.4	61.9	34.1	62.5	16.8	29.0	50.2	93.9
Saint Lucia	18	44	10.0	24.1	1.4	1.5	73.9	76.6	18.2	17.4	94.4	87.8	99.6	94.1	15.6	40.8	10.2	22.5	16.5	40.1

Region, development group, country or area	Population aged 65 years or over (thousands)		Percentage aged 65 years or over		Total fertility rate		Life expectancy at birth for year 2010-2015		Life expectancy at age 65 for year 2010-2015		Males per 100 females aged 65 years or over		Males per 100 females aged 80 years or over		Old-age dependency ratio (65+ /20-64)[a]		Prospective old-age dependency ratio[b]		Economic old-age dependency ratio[c]	
	2019	2050	2019	2050	2019	2050	male	female	male	female	2019	2050	2019	2050	2019	2050	2019	2050	2019	2050
Saint Vincent and the Grenadines	11	21	9.7	18.9	1.9	1.7	69.6	74.5	14.5	16.5	96.5	81.3	84.5	75.8	16.3	32.2	14.6	23.0	19.8	37.4
Trinidad and Tobago	155	310	11.1	23.0	1.7	1.6	69.8	75.2	15.2	17.4	81.3	78.8	63.1	65.1	17.8	40.8	13.2	25.2	26.4	62.4
United States Virgin Islands*	21	25	19.9	28.5	2.0	1.8	76.7	82.2	16.2	20.3	78.0	68.8	60.5	61.1	36.7	56.5	21.4	32.2	49.5	82.0
Central America	12,574	36,023	7.1	16.1	2.2	1.8	71.6	77.6	16.8	18.9	81.2	76.7	71.7	67.2	12.5	27.4	8.2	14.2	13.1	27.5
Belize	19	73	4.9	12.8	2.3	1.8	71.1	76.0	17.6	18.2	104.0	80.4	99.0	74.7	8.8	21.0	5.4	10.9	8.9	20.1
Costa Rica	499	1,366	9.9	23.7	1.7	1.6	76.7	81.7	18.3	20.8	86.6	87.8	73.7	78.1	16.0	41.6	8.0	17.3	19.9	51.2
El Salvador	547	1,128	8.5	16.3	2.0	1.7	67.0	76.3	16.1	18.1	71.7	61.0	70.8	52.5	15.3	27.3	10.6	15.2	18.2	31.6
Guatemala	867	2,948	4.9	10.9	2.8	2.0	69.2	75.6	17.0	18.7	80.4	77.5	77.1	65.3	9.8	18.6	6.2	8.9	9.5	17.4
Honduras	471	1,776	4.8	12.8	2.4	1.8	71.6	76.3	17.1	19.4	81.7	83.5	70.8	68.6	9.1	21.4	5.4	10.1	9.5	21.6
Mexico	9,462	26,416	7.4	17.0	2.1	1.7	72.0	77.9	16.7	18.8	81.6	76.1	71.3	67.3	12.9	28.9	8.7	15.6	13.2	28.3
Nicaragua	357	1,273	5.5	14.9	2.4	1.9	69.8	76.4	15.9	18.5	74.4	73.9	63.7	57.6	9.8	25.4	6.4	12.0	11.1	27.9
Panama	353	1,043	8.3	17.8	2.4	2.0	74.4	80.4	18.9	21.2	86.8	87.7	78.3	78.0	14.7	32.0	6.8	13.1	19.1	39.4
South America	39,343	99,677	9.2	20.3	1.9	1.7	71.3	78.1	16.1	19.2	76.8	80.3	60.5	66.2	15.4	35.2	9.4	16.9	18.3	40.3
Argentina	5,035	9,480	11.2	17.3	2.2	1.9	72.2	79.0	15.0	19.1	69.1	75.4	48.8	56.3	20.0	30.3	14.0	16.5	24.3	36.4
Bolivia (Plurinational State of)	845	2,014	7.3	12.7	2.7	2.0	66.7	71.9	16.6	18.5	86.1	84.3	73.3	71.5	14.1	21.9	7.9	11.2	15.1	21.9
Brazil	19,526	52,026	9.3	22.7	1.7	1.6	70.7	78.0	16.0	19.2	75.6	78.6	59.7	64.3	14.9	39.5	8.6	18.0	18.2	46.2
Chile	2,252	5,060	11.9	24.9	1.6	1.6	76.3	82.1	17.5	20.8	75.6	87.2	56.7	76.2	19.2	44.6	10.1	19.8	26.2	59.7
Colombia	4,413	11,759	8.8	21.0	1.8	1.6	73.1	78.9	17.5	19.4	79.8	81.3	70.1	71.6	14.6	36.0	8.1	17.1	17.0	40.4
Ecuador	1,281	3,775	7.4	16.2	2.4	1.9	72.8	78.5	17.8	19.8	86.1	87.5	74.2	77.3	13.2	28.3	7.4	13.0	13.6	27.3
French Guiana*	15	70	5.3	12.9	3.3	2.6	76.2	82.8	15.9	20.7	93.2	81.2	54.2	67.1	10.0	24.0	5.5	11.3	..	..
Guyana	53	122	6.7	14.8	2.4	2.0	65.4	72.2	16.5	18.5	83.2	79.8	75.5	73.3	12.1	25.9	7.4	17.4	13.8	27.0
Paraguay	466	1,163	6.6	12.8	2.4	1.9	71.3	75.1	16.2	18.1	91.8	88.4	74.9	72.5	12.1	21.5	8.3	12.7	12.5	21.4
Peru	2,729	7,643	8.4	18.9	2.2	1.8	72.6	77.7	16.3	18.7	88.3	90.9	76.7	75.7	14.3	33.4	9.3	15.8	17.8	41.1
Suriname	41	98	7.0	14.4	2.4	1.9	67.8	74.3	13.5	16.4	72.4	73.3	60.1	57.1	12.2	24.6	11.6	18.9	14.5	28.0
Uruguay	517	789	14.9	21.7	2.0	1.8	73.2	80.7	15.4	20.6	64.0	75.1	41.2	54.7	26.0	38.7	16.5	19.5	33.5	49.0
Venezuela (Bolivarian Republic of)	2,171	5,677	7.6	15.3	2.3	1.8	69.4	77.0	14.9	17.7	79.3	75.5	61.0	58.7	13.5	26.1	10.6	17.0	11.8	22.0

Region, development group, country or area	Population aged 65 years or over (thousands)		Percentage aged 65 years or over		Total fertility rate		Life expectancy at birth for year 2010-2015		Life expectancy at age 65 for year 2010-2015		Males per 100 females aged 65 years or over		Males per 100 females aged 80 years or over		Old-age dependency ratio (65+ /20-64)[a]		Prospective old-age dependency ratio[b]		Economic old-age dependency ratio[c]	
	2019	2050	2019	2050	2019	2050	male	female	male	female	2019	2050	2019	2050	2019	2050	2019	2050	2019	2050
NORTHERN AMERICA	59,962	96,278	16.4	22.6	1.7	1.8	76.8	81.6	18.2	20.8	81.4	87.8	66.0	79.8	27.7	40.9	14.4	19.7	42.5	62.9
Canada	6,602	11,436	17.6	25.0	1.5	1.6	79.7	83.8	18.9	21.9	85.0	88.8	66.0	79.0	28.9	44.9	13.8	21.1	44.2	70.7
United States of America*	53,340	84,813	16.2	22.4	1.8	1.8	76.5	81.3	18.1	20.7	81.0	87.7	66.0	79.9	27.6	40.4	14.4	19.6	42.3	62.1
OCEANIA	5,282	10,271	12.5	17.9	2.3	2.1	75.4	79.4	18.3	20.6	88.3	86.7	73.1	76.9	22.1	32.4	11.7	16.0	28.4	42.7
Australia and New Zealand	4,778	8,811	15.9	22.9	1.8	1.7	80.2	84.2	19.3	22.0	88.4	86.7	72.9	76.8	27.1	41.9	13.1	19.2	35.4	56.8
Australia*	4,013	7,474	15.9	22.8	1.8	1.7	80.3	84.5	19.4	22.2	88.6	87.3	73.1	76.7	27.1	41.6	12.8	18.6	34.4	54.7
New Zealand*	765	1,338	16.0	23.9	1.9	1.7	79.5	83.1	18.9	21.2	87.2	83.7	72.2	77.2	27.5	43.8	13.9	22.0	41.2	70.1
Melanesia	420	1,251	3.8	7.2	3.5	2.6	62.7	65.5	11.5	11.8	87.9	87.7	79.8	81.5	7.5	12.7	12.2	16.0	7.8	13.4
Fiji	50	120	5.6	11.2	2.8	2.1	65.4	68.6	12.0	13.0	81.1	83.6	70.2	75.4	9.9	19.3	14.7	21.8	11.7	22.3
New Caledonia*	27	71	9.4	20.5	1.9	1.8	73.7	79.3	14.7	18.4	90.4	82.7	56.9	64.6	15.6	36.1	11.8	20.2	20.4	47.1
Papua New Guinea	308	934	3.5	6.6	3.5	2.6	61.4	64.1	11.0	11.0	87.7	89.7	82.7	89.9	6.9	11.6	12.5	16.6	7.0	11.9
Solomon Islands	24	91	3.6	7.0	4.4	3.1	69.8	73.3	14.1	16.4	94.2	79.3	92.2	67.8	7.9	13.8	7.3	10.2	8.9	15.4
Vanuatu	11	36	3.6	6.5	3.7	2.9	68.0	71.1	11.6	12.8	108.0	82.6	109.4	71.3	7.5	11.9	11.0	13.0	8.6	13.6
Micronesia	36	89	6.6	13.1	2.8	2.2	69.1	74.7	13.5	17.2	81.5	75.7	53.7	61.8	12.1	23.1	9.6	15.6	25.2	50.3
Guam*	17	37	10.2	19.2	2.3	1.9	75.5	81.8	15.5	20.1	81.3	81.6	55.8	66.8	17.8	34.1	10.6	18.4	25.2	50.3
Kiribati	5	15	4.1	8.7	3.5	2.7	62.5	70.6	11.6	17.3	58.3	59.2	37.6	34.1	7.9	15.9	7.3	12.3	..	..
Micronesia (Fed. States of)	5	11	4.2	8.1	3.0	2.2	65.3	68.6	9.8	12.2	83.5	74.9	44.8	44.4	7.7	13.5	15.1	19.4	..	..
Polynesia*	48	121	7.1	14.9	2.7	2.3	71.6	75.9	14.1	16.1	89.0	83.7	69.2	75.3	13.1	27.1	11.5	17.8	15.5	32.2
French Polynesia*	24	68	8.7	21.9	1.9	1.7	74.0	78.6	15.3	17.7	94.4	89.4	71.7	83.2	14.2	38.8	10.1	21.0	17.9	46.3
Samoa	10	24	4.9	9.1	3.8	2.8	70.2	74.5	12.7	14.7	79.3	85.6	60.1	69.7	10.4	17.3	11.8	14.8	11.1	17.8
Tonga	6	12	5.9	8.9	3.5	2.7	68.4	72.2	13.0	14.0	85.0	68.5	79.6	70.2	12.3	16.5	14.7	15.6	14.0	17.9

Notes

The designations employed in this publication and the material presented in it do not imply the expression of any opinion whatsoever on the part of the Secretariat of the United Nations concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. The term "country" as used in this publication also refers, as appropriate, to territories or areas.

In this report, data for countries and areas are often aggregated in six continental regions: Africa, Asia, Europe, Latin America and the Caribbean, Northern America, and Oceania. Further information on continental regions is available from https://unstats.un.org/unsd/methodology/m49/. Countries and areas have also been grouped into geographic regions based on the classification being used to track progress towards the Sustainable Development Goals of the United Nations (see: https://unstats.un.org/sdgs/indicators/regional-groups/).

The designation of "more developed" and "less developed", or "developed" and "developing", is intended for statistical purposes and does not express a judgment about the stage in the development process reached by a particular country or area. More developed regions comprise all countries and areas of Europe and Northern America, plus Australia, New Zealand and Japan. Less developed regions comprise all countries and areas of Africa, Asia (excluding Japan), Latin America and the Caribbean, and Oceania (excluding Australia and New Zealand).

The group of least developed countries (LDCs) includes 47 countries, located in sub-Saharan Africa (32), Northern Africa and Western Asia (2), Central and Southern Asia (4), Eastern and South-Eastern Asia (4), Latin America and the Caribbean (1), and Oceania (4). Further information is available at http://unohrlls.org/about-ldcs/.

The group of Landlocked Developing Countries (LLDCs) includes 32 countries or territories, located in sub-Saharan Africa (16), Northern Africa and Western Asia (2), Central and Southern Asia (8), Eastern and South-Eastern Asia (2), Latin America and the Caribbean (2), and Europe and Northern America (2). Further information is available at http://unohrlls.org/about-lldcs/.

The group of Small Island Developing States (SIDS) includes 58 countries or territories, located in the Caribbean (29), the Pacific (20), and the Atlantic, Indian Ocean, Mediterranean and South China Sea (AIMS) (9). Further information is available at http://unohrlls.org/about-sids/.

The classification of countries and areas by income level is based on gross national income (GNI) per capita as reported by the World Bank (June 2018). These income groups are not available for all countries and areas.

Two dots (..) indicate that data are not available or are not reported separately

* For country notes, please refer to: https://population.un.org/wpp/Download/Metadata/Documentation

a. Old-age dependency ratio: Number of persons aged 65 or over per 100 persons of working age 20-64.

b. Prospective old-age dependency ratio: Number of persons above the age at which the remaining life expectancy is 15 years relative to the number of persons between age 20 years and the age at which the remaining life expectancy is 15 years.

c. Economic old-age dependency ratio: Effective number of consumers aged 65 or over relative to the effective number of workers of all ages.

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