

Aging Demographic Data Sheet 2018



Introduction

Population aging challenges the ability of societies to adapt to ongoing demographic changes. Responding appropriately to these challenges has been hampered because conventional measures of aging are misleading, and do not take spatial and temporal variations in the characteristics of people into account.

Today, 60 or 65 year-olds are very different from their counterparts half a century earlier and are likely to be very different from what they will be like half a century in the future. People are living longer, healthier lives and have better cognition. In any year, people are also different geographically and across population subgroups. It is not only that "40 is the new 30", but today "70 is the new 60". This is why 21st century aging can better be addressed using 21st century tools.

- The Characteristics Approach to the Measurement of Population Aging:** Taking the changing characteristics of groups of people, such as life expectancy, physical health, cognitive functioning, etc., into account allows the construction of new, multidimensional measures of aging. These new measures provide novel perspectives on important policy questions.
- How Old do you Need to be to be "Old"?** The frequently used old-age thresholds of 60 or 65 are inconsistent with the reality of people living longer and healthier lives. A better alternative is to define the onset of old age based on ages adjusted for remaining life expectancy.
- More Accurate Measures of Population Aging:** The widely used measures of population aging, the old-age dependency ratio and the median age of the population, overestimate the speed of aging. We show this by comparing the old measures with their "prospective" analogs that adjust ages for differences in remaining life expectancy.
- An Intergenerationally Fair Normal Pension Age:** Fairness is a fundamental democratic value. Intergenerationally fair normal pension ages can be computed using the Characteristics Approach, and they ensure that the balance of pension contributions and receipts is the same for each generation, and that pension systems are flexible enough to adapt to demographic changes.

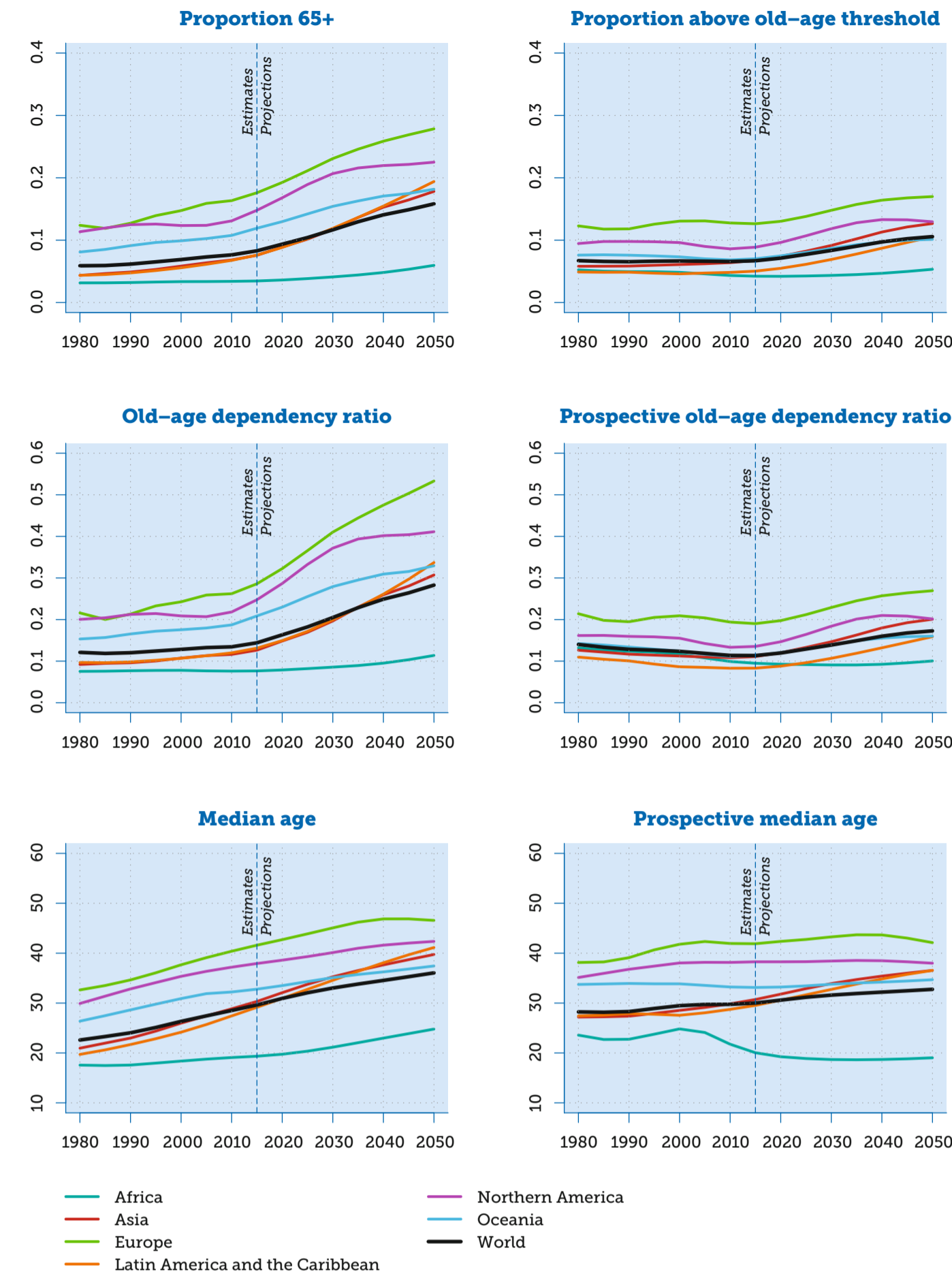
In this Data Sheet, we present measures of population aging adjusted for changes in remaining life expectancy and compare them to unadjusted measures. Unadjusted measures of population aging often assume that old-age begins at age 60 or 65. In this Data Sheet, we define that stage of old-age as beginning at the age when remaining life expectancy falls to 15 years. The result is a dynamic old-age threshold that reflects variations in demographic conditions. The proportion of the population who are above the old-age threshold and the prospective old-age dependency ratio are two measures based on that dynamic threshold. In this Data Sheet, we show that when aging is measured using the new threshold, much slower speeds of aging are observed than when unadjusted figures are used.

Using the dynamic old-age threshold, we can see new things. For example, we show here that the proportion of people 65+ years old who are "old" differs from country to country and changes over time. In the conventional approach, everyone 65+ years old is counted as being "old". We can also see that the proportion of the adult lifespan spent in old-age tends to decrease over time. Without adjusting for changes in remaining life expectancy it appears that people would be spending an ever increasing proportion of their adult lives in old-age.

For more information visit our website www.reaging.org

All calculations in this Data Sheet are based on the United Nations World Population Prospects: The 2017 Revision, New York, NY: Department of Economic and Social Affairs, Population Division, available at esa.un.org/wpp/. Team at the International Institute for Applied Systems Analysis (IIASA): Sergei Scherbov, Stefanus Andriuchowicz, Warren Sanderson. Contact: International Institute for Applied Systems Analysis, Schlossplatz 1, 2361 Laxenburg, Austria, www.iiasa.ac.at, popinfo@iiasa.ac.at. Responsible for content: Sergei Scherbov. This project has received funding from the European Research Council (ERC) under the European Union's Seventh Framework Programme (FP7/2007-2013), grant agreement number ERC-2013-AdG-323947 (Re-Aging). Suggested citation: International Institute for Applied Systems Analysis (IIASA). 2018. Aging Demographic Data Sheet 2018. IIASA: Laxenburg, Austria.

Overview main UN regions



Country rankings

Life expectancy at age 65, 2010-15 (years)		
Rank	Men	Women
1	Australia	19.3
2	Switzerland	19.1
3	China, Hong Kong SAR	19.1
4	France	19.0
5	Canada	19.0
6	Israel	19.0
7	Japan	19.0
8	New Zealand	18.9
9	Spain	18.7
10	Singapore	18.6
Rank	Women	Years
1	Japan	23.9
2	China, Hong Kong SAR	23.7
3	France	22.9
4	Spain	22.6
5	Switzerland	22.2
6	Australia	22.1
7	Italy	22.0
8	Singapore	21.9
9	Canada	21.8
10	Republic of Korea	21.8

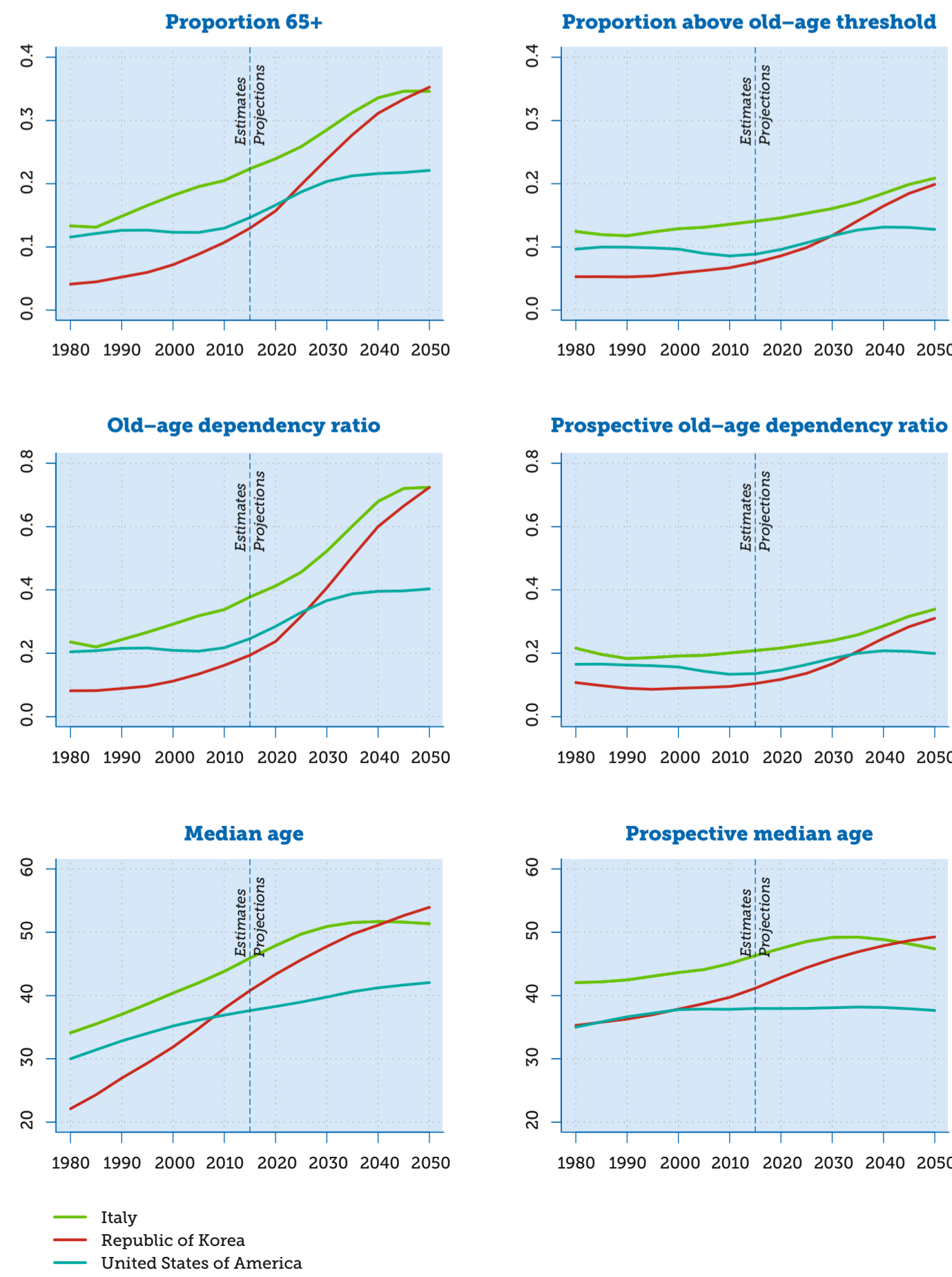
Countries with a population of over 200 thousand age 70 and above

Age at prospective old-age threshold, 2010-15		
Rank	Men	Women
1	Australia	70.5
2	China, Hong Kong SAR	70.4
3	France	70.4
4	Switzerland	70.3
5	Canada	70.3
6	Israel	70.3
7	Japan	70.3
8	New Zealand	70.0
9	Spain	70.0
10	Singapore	69.8
Rank	Women	Years
1	Japan	75.5
2	China, Hong Kong SAR	75.3
3	France	74.5
4	Spain	73.9
5	Australia	73.6
6	Canada	73.5
7	Switzerland	73.5
8	Puerto Rico	73.4
9	Singapore	73.4
10	Italy	73.3

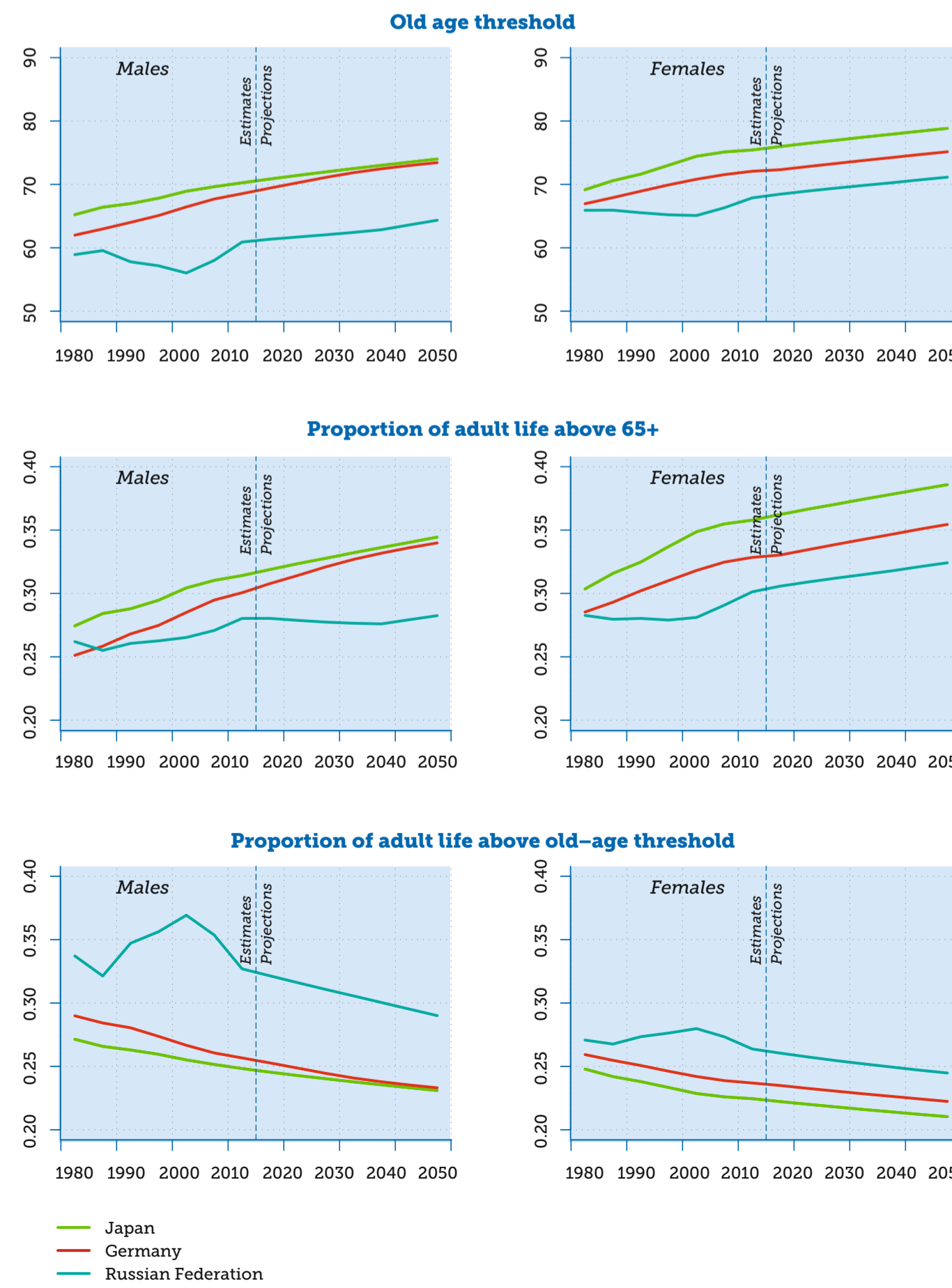
Countries with a population of over 200 thousand age 70 and above

Proportion of population above 65+, 2015 (%)		
Rank	Men	Women
1	Japan	26.0
2	Italy	22.4
3	Germany	21.1
4	Portugal	20.7
5	Finland	20.3
6	Bulgaria	20.1
7	Greece	19.9
8	Sweden	19.6
9	Latvia	19.3
10	Denmark	19.0
Proportion of population above prospective old-age threshold, 2015 (%)		
Rank	Men	Women
1	Bulgaria	18.1
2	Latvia	16.5
3	Ukraine	15.6
4	Croatia	15.6
5	Serbia	15.2
6	Germany	15.0
7	Lithuania	14.9
8	Hungary	14.4
9	Romania	14.4
10	Georgia	14.4

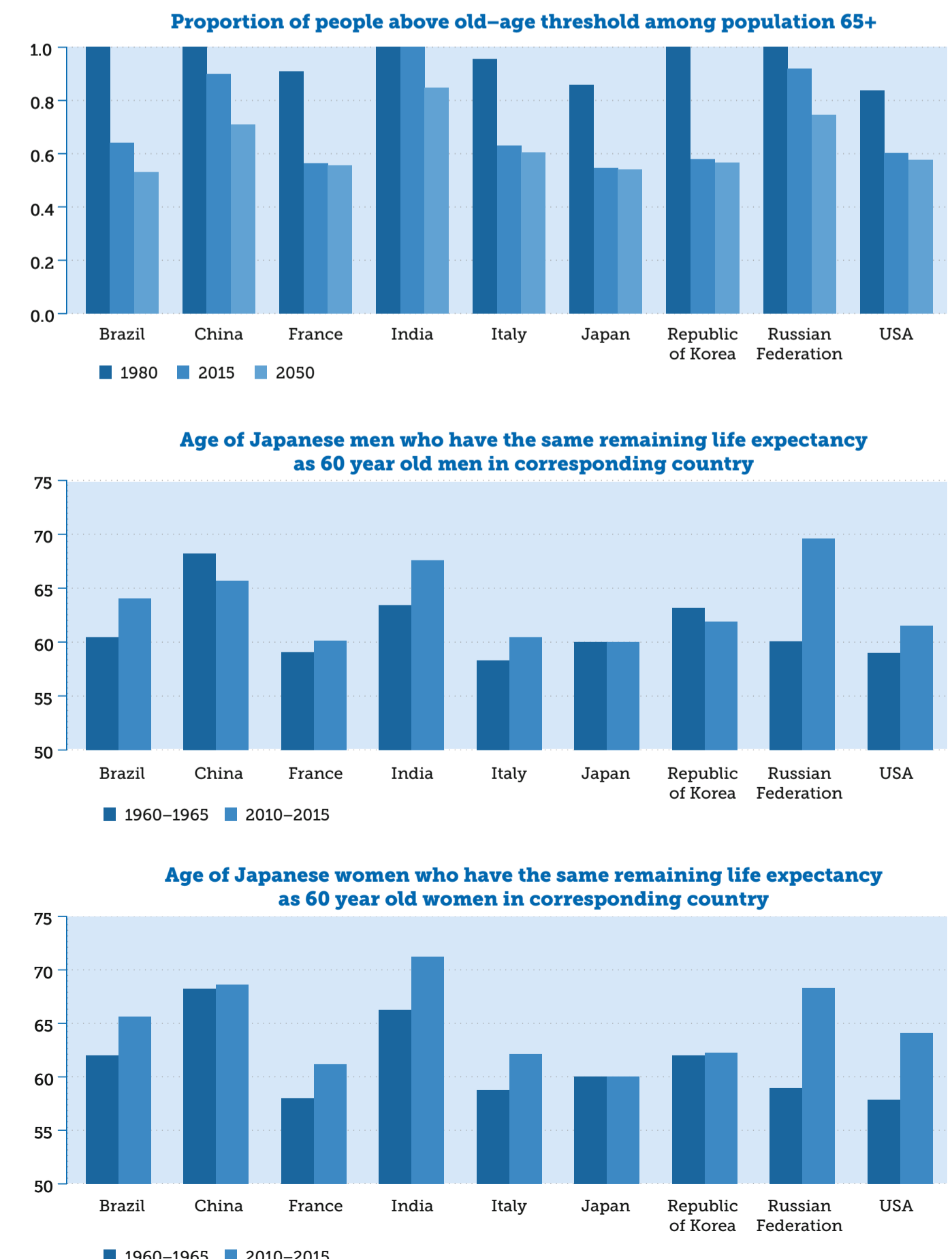
Selected countries



Selected countries



Selected countries



Glossary

- Age of Japanese men/women who have the same remaining life expectancy as 60 year old men/women in corresponding country**
We use Japan as a reference here because recently it has had one of the highest life expectancies (both sexes) in the world. A more detailed explanation of how this is calculated can be found in Sanderson & Scherbov (2016b, 2017).
- Intergenerationally fair normal pension age**
This normal pension age takes changing mortality conditions into account and ensures that no generation benefits at the expense of another (Sanderson & Scherbov 2014, 2017).
- Life expectancy at age 65 (e₆₅)**
The average number of years a 65-year-old person has left to live if subjected to the age-specific mortality rates of a given period for the rest of his/her life.
- Life expectancy at birth (e₀)**
The average number of years a newborn would live if subjected to the age-specific mortality rates of a given period for his/her entire life.
- Median age (MA)**
The age that divides a population into two numerically equal groups, with half of the people being younger than this age and half older (UN 2017b).
- Old-age dependency ratio (OADR)**
The ratio of the number of people age 65+ to the number of people in the age group 20-64. The change in the old-age dependency ratio is used as a measure of population aging. The old-age dependency ratio is based solely on people's chronological age. When relevant age-specific characteristics of people vary, it can produce biased results (UN 2017b).
- Old-age threshold (OAT)**
The old-age threshold is the age at which remaining life expectancy is 15 years (Sanderson & Scherbov 2008).
- Population estimates and projections**
The population estimates and projections used in this Data Sheet come from World Population Prospects, 2017 (UN 2017b). Data relevant to population stocks are given at exact dates. Data relevant only to mortality are given at the middle of five-year intervals.
- Proportion of adult life lived above the old-age threshold**
The share of the population with an average remaining life expectancy below 15 years among the population above age 65+.
- Proportion of adult life lived above the old-age threshold**
The share of the population with an average remaining life expectancy below 15 years among the population above age 65+.
- Prospective old-age dependency ratio (POADR)**
This measure uses the old age threshold which varies over time and space. It is calculated as a ratio of the number of people older than the old-age threshold to the number of people between age 20 and the old-age threshold. (Sanderson & Scherbov 2008, 2015)
- Prospective median age (PMA)**
The median age of the population adjusted for changes in remaining life expectancy (Sanderson & Scherbov 2008).

Literature

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Table with columns: Region/country, Life expectancy (years), Median age (years), Old-age dependency ratio (%), Percentage of adult lifetimes spent... (%), Rank old-age dependency ratio. Rows include World, More developed regions, Least developed countries, High-income countries, Middle-income countries, Lower-middle-income countries, Lower-income countries, Sub-Saharan Africa, Africa, Eastern Africa, Burundi, Comoros, Djibouti, Eritrea, Ethiopia, Kenya, Madagascar, Malawi, Mauritius, Mayotte, Mozambique, Réunion, Rwanda, Seychelles, Somalia, South Sudan, Uganda, United Republic of Tanzania, Zambia, Zimbabwe, Middle Africa, Angola, Cameroon, Central African Republic, Chad, Congo, Dem. Republic of the Congo, Equatorial Guinea, Gabon, Sao Tome and Principe, Northern Africa, Algeria, Egypt, Libya, Morocco, Sudan, Tunisia, Western Sahara, Southern Africa, Botswana, Lesotho, Namibia, South Africa, Swaziland, Asia, Benin, Burkina Faso, Cabo Verde, Côte d'Ivoire, Gambia, Ghana, Guinea, Guinea-Bissau, Liberia, Mali, Mauritania, Niger, Nigeria, Senegal, Sierra Leone, Togo, Asia, Eastern Asia, China, China, Hong Kong SAR, China, Macao SAR, China, Taiwan Province of China, Dem. People's Republic of Korea, Japan, Mongolia, Republic of Korea, South-Central Asia, Central Asia, Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan, Uzbekistan, Southern Asia, Afghanistan, Bangladesh, Bhutan, India, Iran (Islamic Republic of), Maldives, Nepal, Pakistan, Sri Lanka, South-Eastern Asia, Brunei Darussalam, Cambodia, Indonesia, Lao People's Dem. Republic, Malaysia, Myanmar, Philippines, Singapore, Thailand, Timor-Leste, Viet Nam, Viet Nam, Western Asia, Armenia, Azerbaijan, Bahrain, Cyprus, Georgia, Iraq, Israel, Jordan, Kuwait, Lebanon, Oman, Qatar, Saudi Arabia, State of Palestine, Syrian Arab Republic, Turkey, United Arab Emirates, Yemen, Eastern Europe, Belarus, Bulgaria, Czechia, Finland, Hungary, Poland, Republic of Moldova, Romania, Russian Federation, Slovakia, Ukraine, Northern Europe, Channel Islands, Denmark, Estonia, Finland, Iceland, Ireland, Latvia, Lithuania, Norway, Sweden, United Kingdom, Southern Europe, Albania, Bosnia and Herzegovina, Croatia, Greece, Italy, Malta, Montenegro, Portugal, Serbia, Slovenia, Spain, TFRY Macedonia, Western Europe, Austria, Belgium, France, Germany, Luxembourg, Netherlands, Switzerland, Latin America & the Caribbean, Caribbean, Antigua and Barbuda, Aruba, Bahamas, Barbados, Cuba, Curaçao, Dominican Republic, Grenada, Guadeloupe, Haiti, Jamaica, Martinique, Puerto Rico, Saint Lucia, Saint Vincent & the Grenadines, Trinidad and Tobago, United States Virgin Islands, Central America, Belize, Costa Rica, El Salvador, Guatemala, Honduras, Mexico, Nicaragua, Panama, South America, Argentina, Bolivia (Plurinational State of), Brazil, Chile, Colombia, Ecuador, French Guiana, Guyana, Paraguay, Peru, Suriname, Uruguay, Venezuela (Bolivarian Republic of), Canada, United States of America, Oceania, Australia/New Zealand, Australia, New Zealand, Melanesia, Fiji, New Caledonia, Papua New Guinea, Solomon Islands, Vanuatu, Micronesia, Guam, Kiribati, Micronesia (Fed. States of), Nauru, New Caledonia, French Polynesia, Samoa, Tonga.

Table with columns: Region/country, Life expectancy (years), Median age (years), Old-age dependency ratio (%), Percentage of adult lifetimes spent... (%), Rank old-age dependency ratio. Rows include Israel, Jordan, Kuwait, Lebanon, Oman, Qatar, Saudi Arabia, State of Palestine, Syrian Arab Republic, Turkey, United Arab Emirates, Yemen, Eastern Europe, Belarus, Bulgaria, Czechia, Finland, Hungary, Poland, Republic of Moldova, Romania, Russian Federation, Slovakia, Ukraine, Northern Europe, Channel Islands, Denmark, Estonia, Finland, Iceland, Ireland, Latvia, Lithuania, Norway, Sweden, United Kingdom, Southern Europe, Albania, Bosnia and Herzegovina, Croatia, Greece, Italy, Malta, Montenegro, Portugal, Serbia, Slovenia, Spain, TFRY Macedonia, Western Europe, Austria, Belgium, France, Germany, Luxembourg, Netherlands, Switzerland, Latin America & the Caribbean, Caribbean, Antigua and Barbuda, Aruba, Bahamas, Barbados, Cuba, Curaçao, Dominican Republic, Grenada, Guadeloupe, Haiti, Jamaica, Martinique, Puerto Rico, Saint Lucia, Saint Vincent & the Grenadines, Trinidad and Tobago, United States Virgin Islands, Central America, Belize, Costa Rica, El Salvador, Guatemala, Honduras, Mexico, Nicaragua, Panama, South America, Argentina, Bolivia (Plurinational State of), Brazil, Chile, Colombia, Ecuador, French Guiana, Guyana, Paraguay, Peru, Suriname, Uruguay, Venezuela (Bolivarian Republic of), Canada, United States of America, Oceania, Australia/New Zealand, Australia, New Zealand, Melanesia, Fiji, New Caledonia, Papua New Guinea, Solomon Islands, Vanuatu, Micronesia, Guam, Kiribati, Micronesia (Fed. States of), Nauru, New Caledonia, French Polynesia, Samoa, Tonga.

All classifications of countries by region, income group and subregion of the world are based on the United Nations World Population Prospects: The 2017 Revision, available at [esa.un.org/unpd/wpp/GeneralFiles/Definition_of_Regions.pdf](#). All calculations in this Data Sheet are based on the United Nations World Population Prospects: The 2017 Revision, New York, NY: Department of Economic and Social Affairs, Population Division, available at [esa.un.org/unpd/wpp/](#).

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