

Comparing Estimates of Life Expectancy at Birth Produced by UN Population

Division for 201 Countries and over Period 1950-2019 with External Data

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Population Association of America
2019 Annual Meeting, Austin, Texas,
United States, April 10-13



United Nations, Population Division, New York, United States

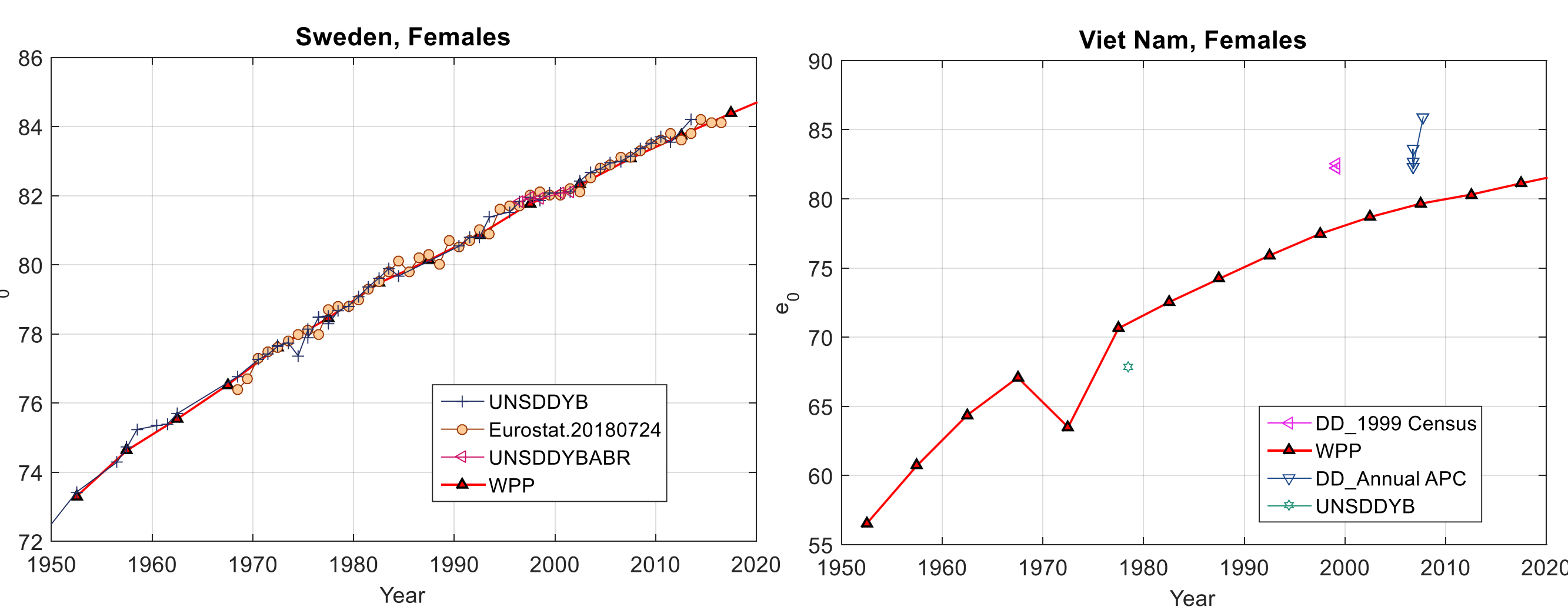
Objective To compare estimates of life expectancy at birth published in the 2017 revision of World Population Prospects (WPP) with data from external sources.

Sources of external estimates:

NSO	Official estimates. The series are from National Statistical Offices (NSO), either from NSO's websites, or from publications. The data collected by the United Nations Population Division. Estimation methods could be found in the NSO publications or online but it is not necessarily readily available for all countries.
SYB	Official estimates. The series are from National Statistical Offices (NSO) but from statistical year books only.
UNSDDYB	Official estimates reported by the member states to the United Nations Statistics Division (UNSD). The data are collected annually by sending questionnaires to relevant statistical authorities in the countries. Information on the estimation process is not collected and is not available for such series. For European countries, UNSD receives data from Eurostat.
Eurostat	The data are Eurostat online database. Documentation is available at the Eurostat website (https://ec.europa.eu/eurostat/data/database).
Transmonee	The series are from Transmonee database of UNICEF (http://transmonee.org/). The data collection for this database is similar to that of UNSD but covers only countries of former Eastern Europe and Central Asia, and selected countries and indicators data from surveys are included as well.

Estimates produced by independent researchers or international organizations are not considered here.

Examples of countries plots with external data

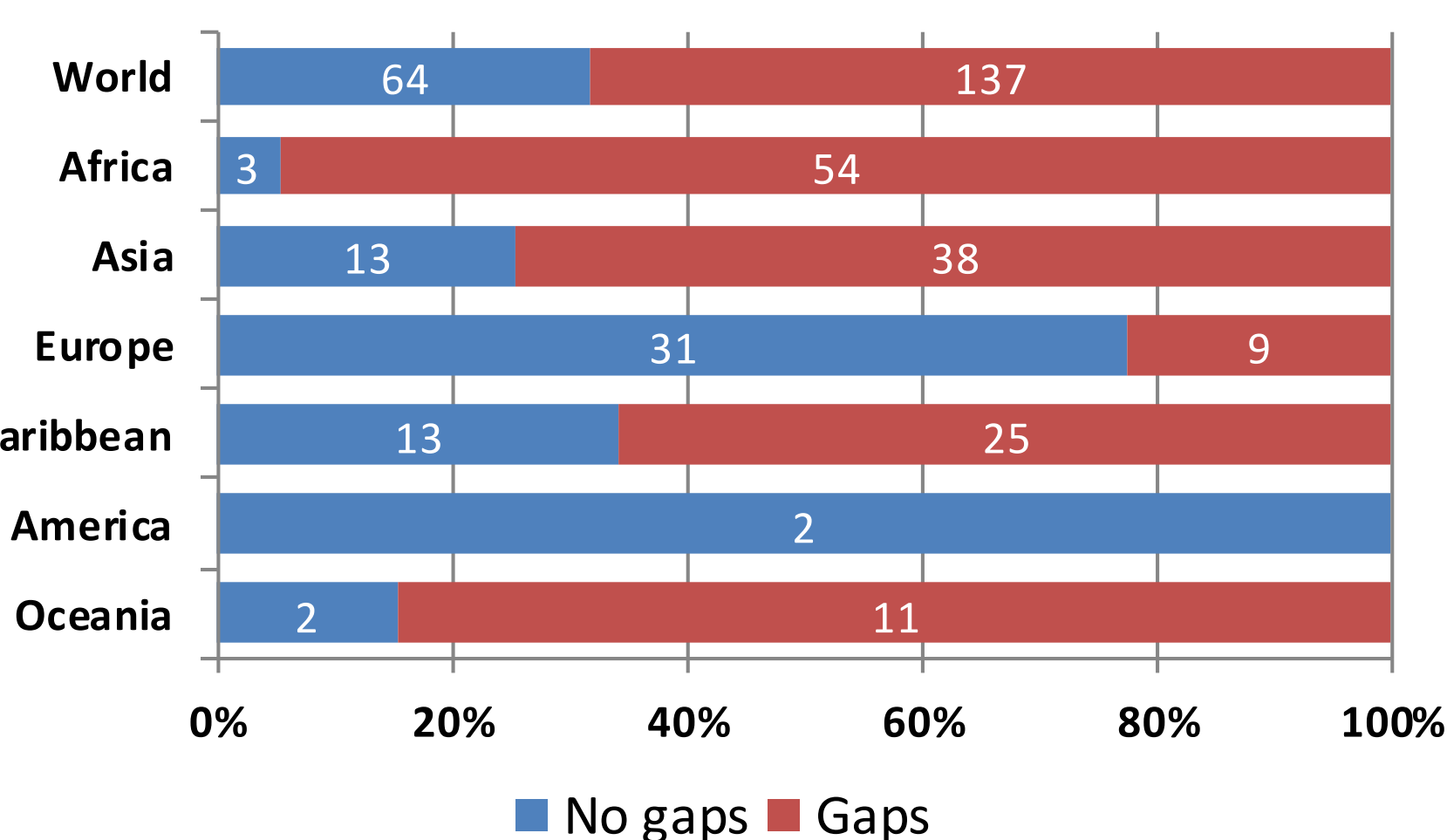


Data Summary

Total number of data points: 37,344

Number of countries	Countries	%
a) with no data	9	4%
b) less than 1 data point per decade	34	17%
c) more than 1 but less than 5	60	30%
d) more than 5 but less than 10	16	8%
e) more than 10	82	41%

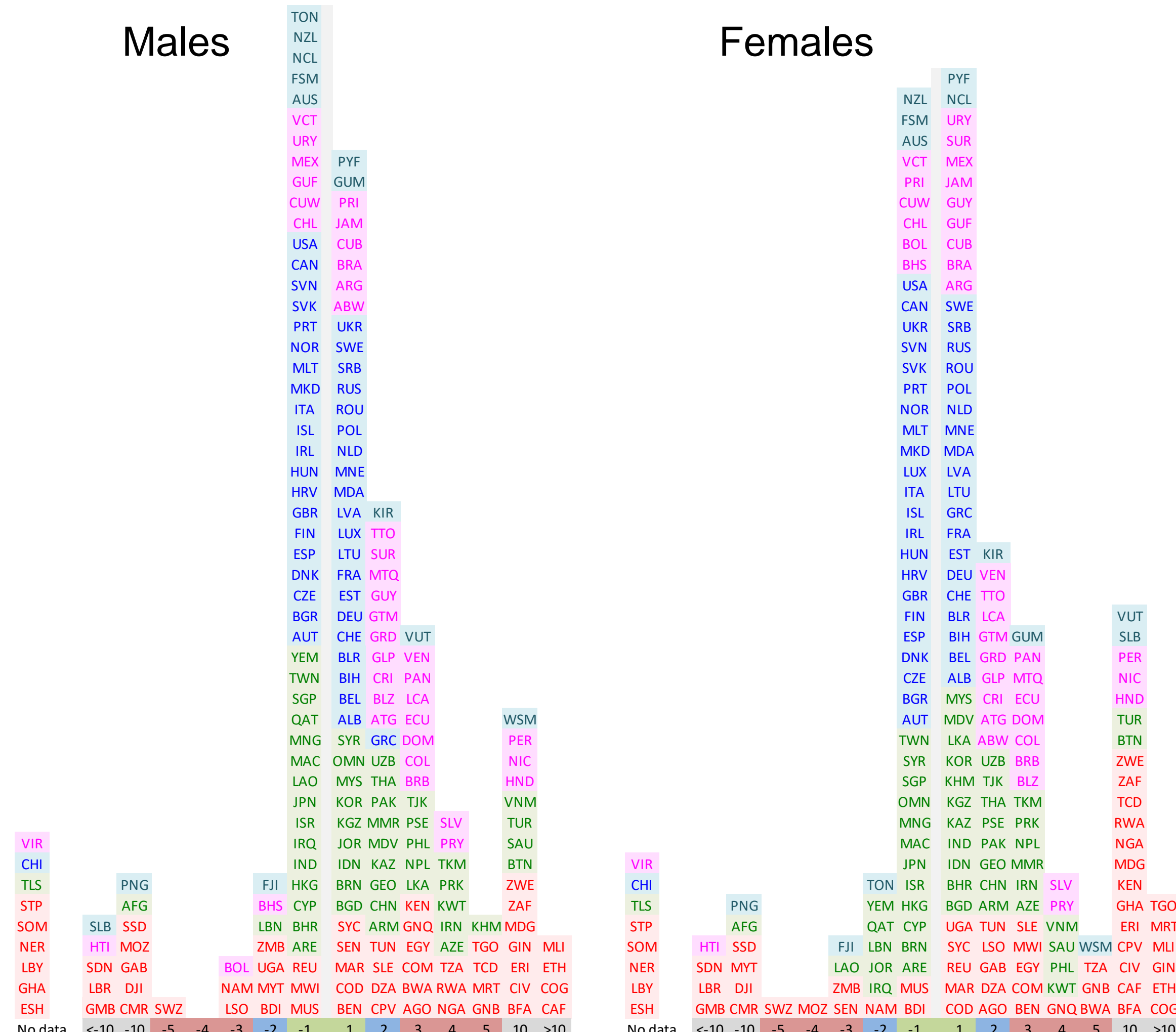
Distribution of countries by significant gaps in mortality data, 1950 to present



A country is classified as a country with "gaps in mortality data" if there are no empirical data for at least for one decade since 1950 or for the period 2010 and later.

Distribution of countries by difference in life expectancy at birth between WPP and external estimates, 1950 to present

Males Females

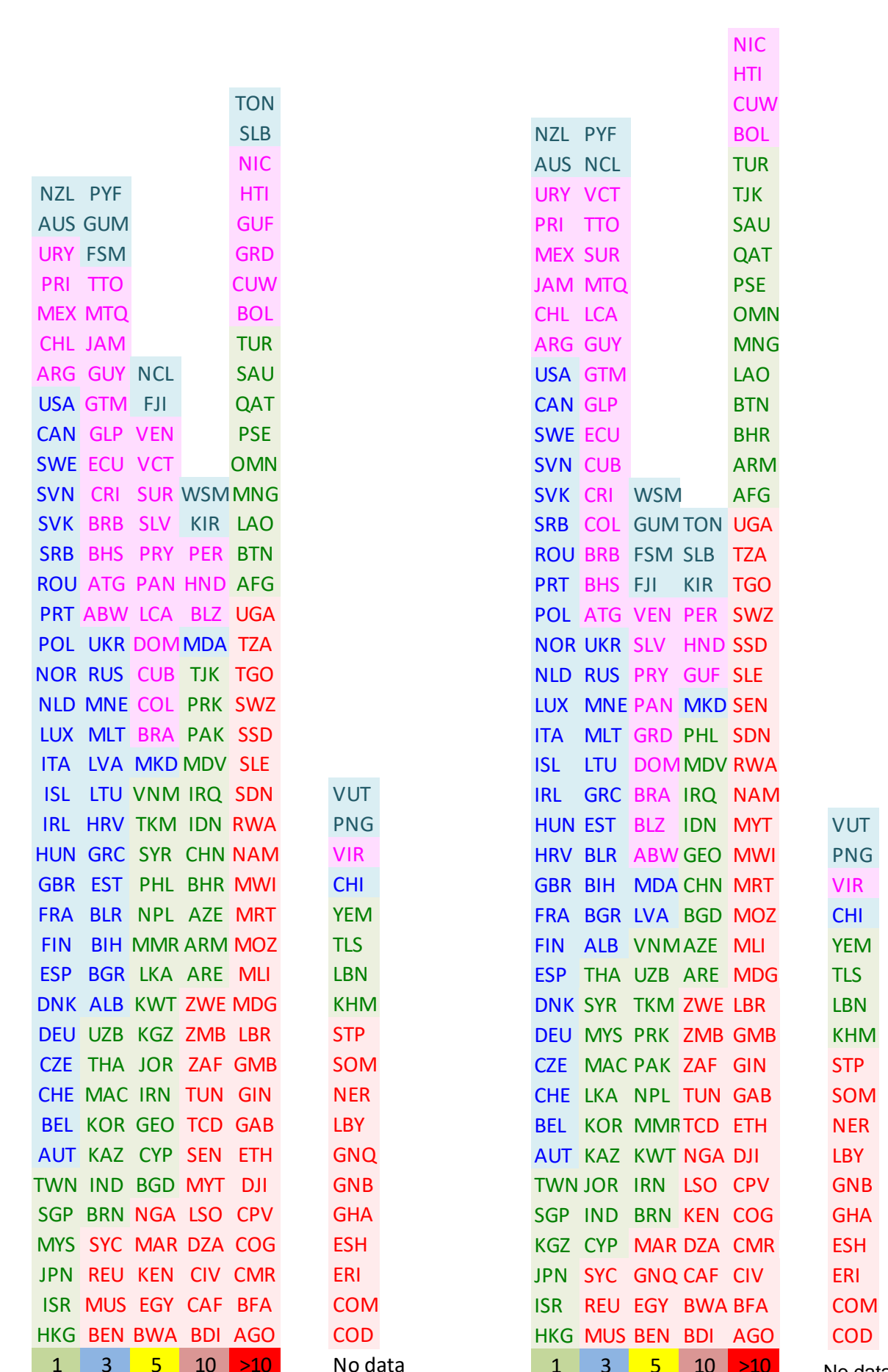


This figure represents the frequency distribution of countries or areas by difference in life expectancy between UN and external estimates for the period 1950-2019.

For males, there are 91 countries (45%) with differences in life expectancy at birth less than 1 year, 32 countries (16%) with differences more than 1 but less than 2 years, 38 (19%) with differences between 3 and 5 years, and 40 (20%) with differences more than 5 years or with no data available. For females, the counts are 91 (45%), 30 (15%), 36 (18%), and 44 (22%), respectively.

Distribution of countries by level of uncertainty in estimates of life expectancy at birth, 1950 to present

Males Females



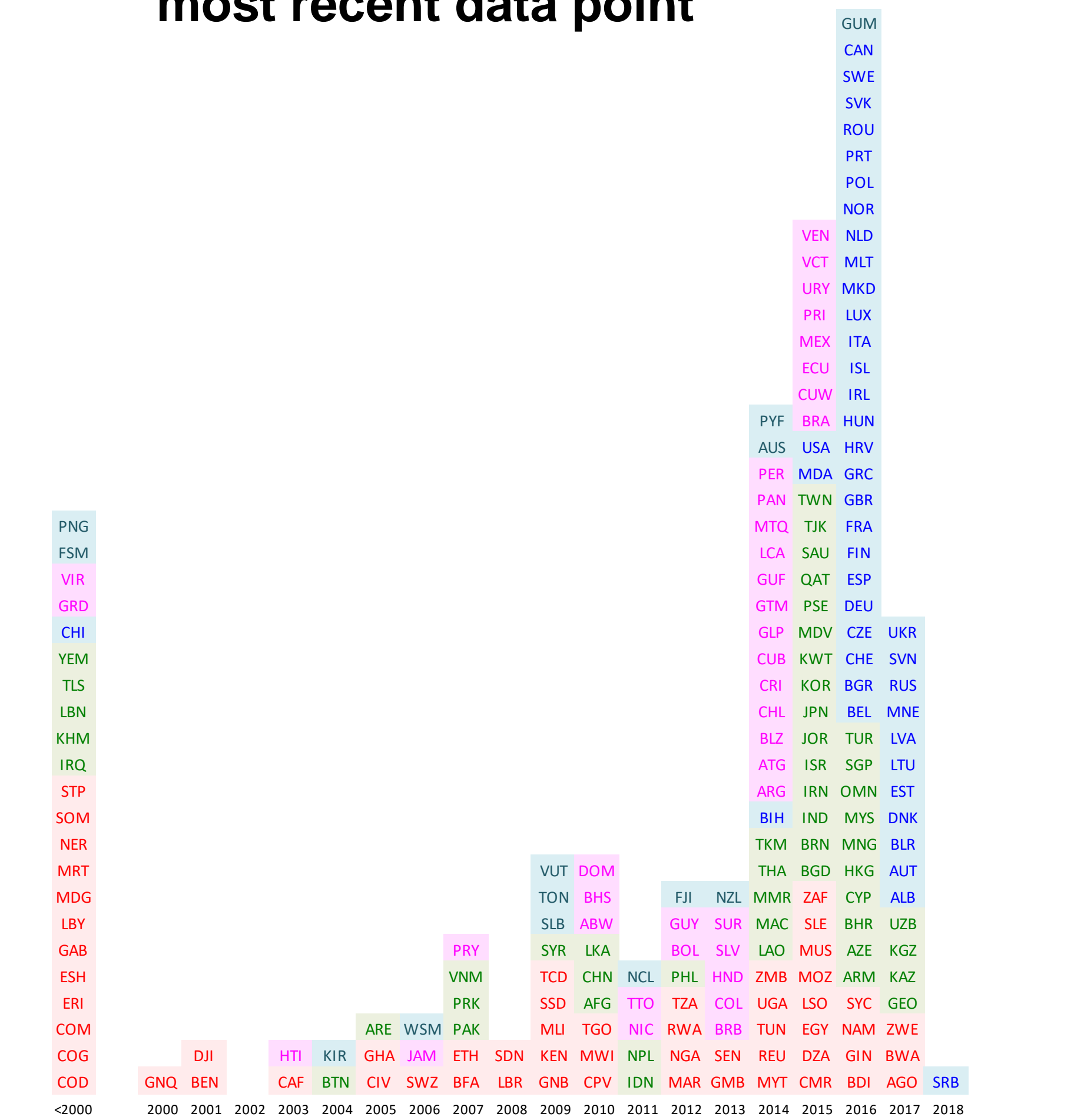
This figure represents the frequency distribution of countries or areas by level of uncertainty in estimates of life expectancy at birth for years from 1950 to present. The uncertainty measure takes into account both RMSE and number of data points available for each country. See also Note 1.

For males, there are 39 countries (19%) for which levels of life expectancy at birth are well known, with uncertainty of less than a year. For another 39 countries (19%), uncertainty is about 3 years, for 33 countries (16%), life expectancy at birth is known up to 5 years, and for the rest, 90 countries or 45%, our knowledge about levels of life expectancy is quite imprecise, with uncertainty to be more than 5 years. For females, the counts are similar, 41 (20%), 41 (20%), 29 (14%), and 90 (45%), respectively.

Note 1. Countries with difference levels within each of the ranges shown in the horizontal axis are stacked in the corresponding bar. Countries from the same world region are displayed next to each other and in the same style (font and background colour). Country codes are available at:

<https://unstats.un.org/unsd/tradekb/website/country-code>

Distribution of countries by year of the most recent data point

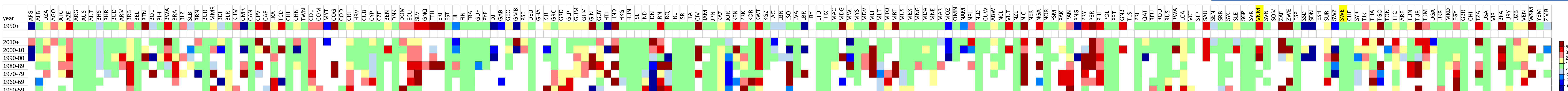


Estimates of life expectancy at birth for 2018 are available only for a single country. For year 2017, the data are available only for 18 (or 9%) of all countries. Overall, the most recent external data, for the last three years, year 2016 and later, are available only for 60 countries (30%): 38 in Europe, 14 in Asia, 7 in Africa, and one in Oceania. No countries in Latin America and the Caribbean have data for this period. For quarter of the countries globally (55), no estimates of life expectancy at birth are available for the last decade (2010 or later), for 14 countries no data available after 2000, and for 8 countries no data available at all.

Findings

- Our knowledge about recent trends in life expectancy at birth, a major health indicator, remains unprecise. Globally, for 70% of the countries, no recent data are available.
- The existing external data have many limitations, especially in the countries without well-functioning civil registration systems, as they are derived from different sources and by different methods often based on incomplete or biased empirical evidence.
- For the entire period covered by the WPP publication, years 1950 and later, life expectancy levels are fairly known for about 40% of the countries in the world (up to 3 years), and well-known, with about 1 year precision, for only 20% of all countries. For the rest of the countries, WPP life tables have to rely on demographic models by incorporating country-specific experiences as much as possible.
- The analysis conducted here emphasizes urgent need for the availability of, and access to, high-quality disaggregated data for measuring mortality levels and trends.

Differences in life expectancy at birth between UN and external estimates by country and period



Root Mean Square Error (RMSE) by country and period between UN and external estimates

