

Age Structure, Mortality, and Prospective Ageing

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The New Faces of Ageing: Stanislaw Kowalski, Age 105



Oldest Person to Compete in a Sanctioned Track and Field Competition

The New Faces of Ageing: Ernie Andrus, Age 93



Ran from the West Coast of the US to the East Coast. It took him 3 years.

The New Faces of Ageing: Yuichiro Miura, Age 80



The Oldest Person to Reach the Summit of Mount Everest.

Organization of this Presentation

- 1. How is population ageing currently conceptualized and measured?
- 2. Another approach to conceptualizing population ageing (using only information published by the United Nations)
- 3. Does the new approach produce different results?
- 4. Conclusions

1. How is Population Ageing Currently Conceptualized

- Most current measures of population ageing are based on chronological age.
- For example, the Old-Age Dependency Ratio and the Median Age.

1. How is Population Ageing Currently Conceptualized

- Question: Should 60 year olds in Russia in 1950 be considered to be as elderly as 60 year old Swedes in 2050?
- If not, is there a better alternative?

2. Another Approach

- One way of conceptualizing how old people are in terms of their needs and capabilities is to measure ageing based on remaining life expectancy.

2. Another Approach

- Why remaining life expectancy?
- It reflects the needs and capacities of older people.
- Remaining life expectancy is a characteristic of people relevant to the study of population ageing that the United Nations publishes for all countries over a long span of time.

2. Another Approach

- The two faces of ageing:
 - 1. Chronological age (based on the number of years people have already lived).
 - 2. Prospective age (based on the number of years people are expected to live in the future).

2. Another Approach

Prospective ages are life expectancy equivalent ages.

People with the same prospective age have the same remaining life expectancy.

- Measures of population ageing based on prospective age are called prospective measures of population ageing.

2. Another Approach

- Some publications
 - Sanderson WC, Scherbov S (2005) Average remaining lifetimes can increase as human populations age. *Nature*, 435(7043):811-813.
 - Sanderson WC, Scherbov S (2010) Remeasuring aging. *Science*, 329(5997):1287-1288.
 - Sanderson, W. and S. Scherbov, 2013, The Characteristics Approach to the Measurement of Population Aging , *Population and Development Review*, 39(4)

3. Different Results?

- 3.1 Old Age Dependency Ratio
- 3.2 Median Age
- 3.3 Policy studies
- 3.4 Academic studies of economic growth

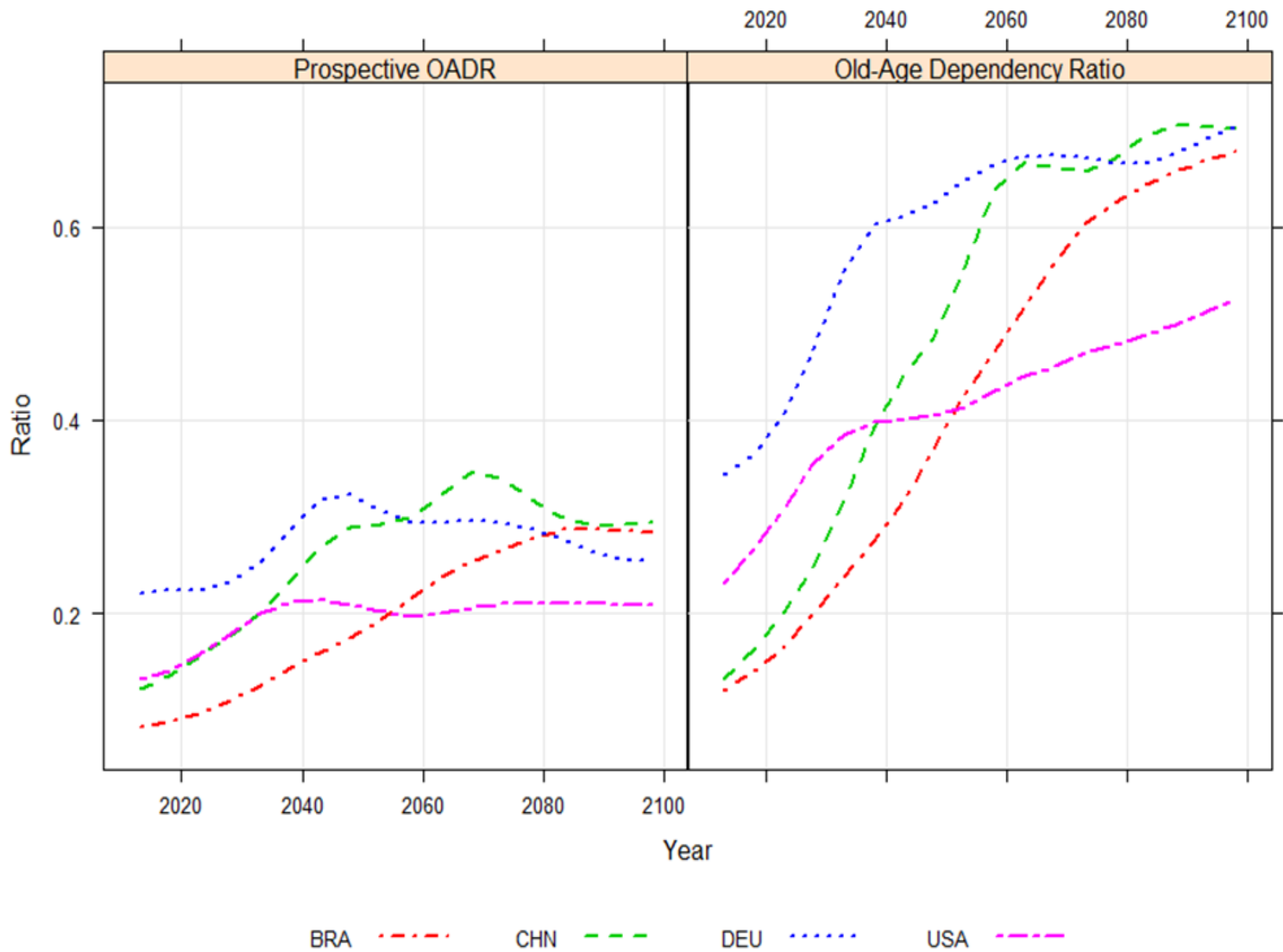
3.1 The Prospective Old Age Dependency Ratio

$$\text{OADR} = \frac{\text{Number of people 65 years or older}}{\text{Number of people ages 20 to 64}}$$

In the Prospective Old-Age Dependency Ratio (POADR), the threshold of being old is not fixed but linked to life expectancy. People are considered old when the average remaining life expectancy in their age group is less than 15 years.

$$\text{POADR} = \frac{\text{Number of people older than the Old-Age Threshold}}{\text{Number of people ages 20 to the Old-Age Threshold}}$$

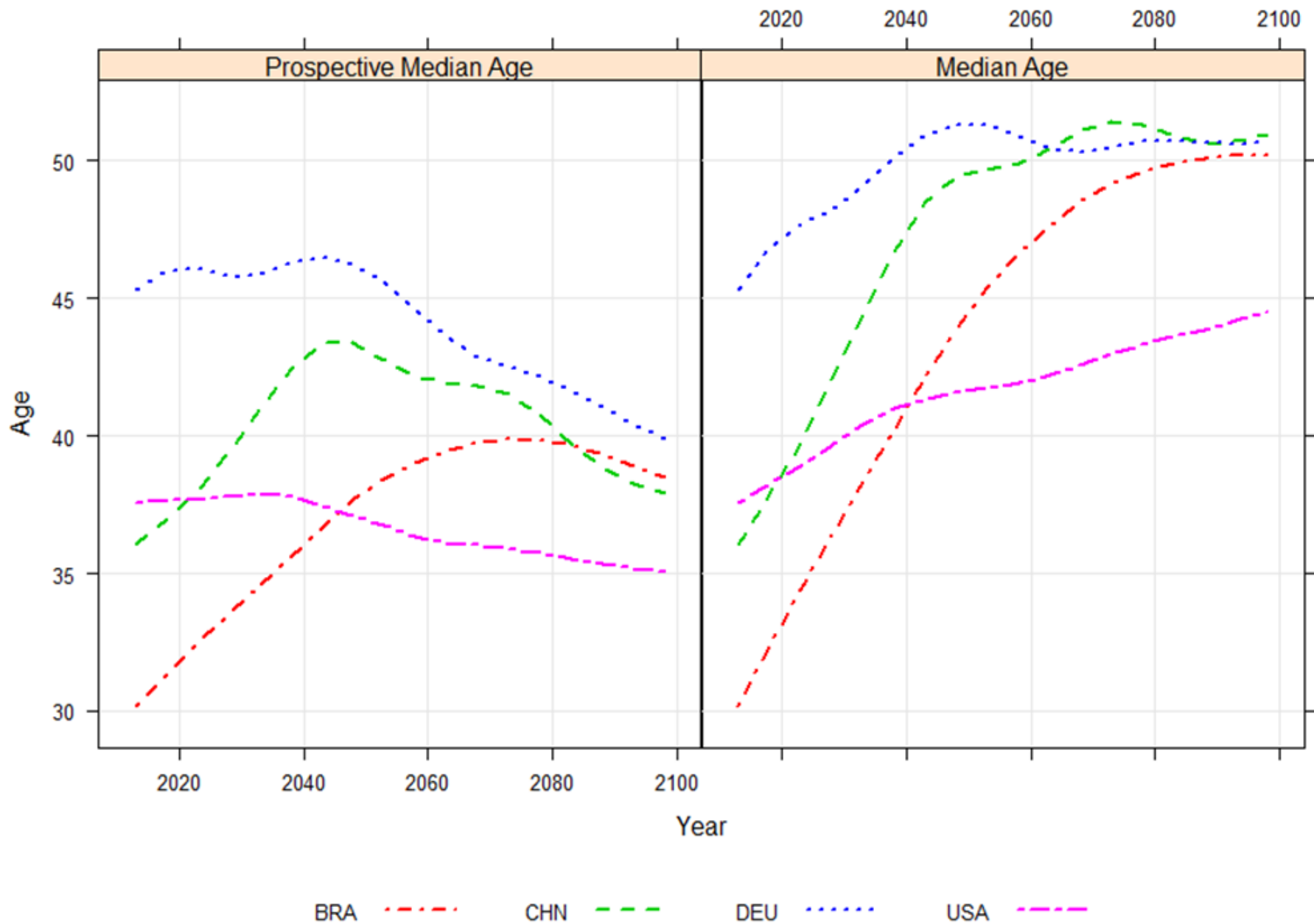
Old-Age Dependency Ratio and Prospective OADR



3.2 The Prospective Median Age

- The prospective median age is the result translating the median age of a population into a corresponding prospective age.

Median Age and Prospective Median Age



3.3 Different Results: Policy Studies

EUROPE AND CENTRAL ASIA STUDIES

GOLDEN AGING

Prospects for
Healthy, Active, and
Prosperous Aging
in Europe and
Central Asia

Maurizio Bussolo, Johannes Koettl,
and Emily Sinnott

An alternative definition of the age of populations can capture the phenomenon that people may feel younger as life expectancy increases ("70 is the new 60"). This can be measured as the "prospective old-age dependency," which is the number of people aged 20 or older with life expectancies of 15 or fewer years, divided by the number of people aged 20 or older with life expectancies greater than 15 years. Sanderson and Scherbov (2010) also argue that dependency should be measured as the presence of disability and not be based on chronological age and that people are younger if they are farther away from death. In this sense, aging can be measured as how far the population is, on average, from death.

3.4 Different Results: Academic Studies of Economic Growth

- “We assess empirically the role played by prospective ageing measures as a predictor of income growth in Europe. We show that prospective ageing measures which move beyond chronological age and incorporate changes in life expectancy are able to explain better the recent long-run growth experience of European economies.”
- *Prospective ageing and economic growth in Europe*
Jesus Crespo Cuaresma, Martin Lábaj, Patrik Pruzinsky´
- [Journal of the Economics of Ageing 2014 \(3\): 50-57](#)

4. Conclusions

- 1. Prospective measures of population ageing are available.
- 2. Prospective measures conceptualize age based on remaining life expectancy.
- 3. Prospective measures can be computed for the same countries and over the same time span as conventional measures, using only data published by the UN.

4. Conclusions

- 4. The picture that we get of the future speed of ageing is very different when prospective measures are used.
- 5. Prospective measures are being used in policy analyses.
- 6. The use of prospective measures produces better forecasts of economic growth.

4. Conclusions

- 7. Prospective measures of population ageing are useful and informative. They provide an additional dimension to our understanding of population ageing.

THANK YOU!