

- [Articles](#)
  - [Current Volume](#)
  - [Older Volumes](#)
  - [Editor's Choice](#)
  - [Replicable Articles](#)
  - [by Author](#)
  - [by Subject](#)
  - [Search](#)
- [Special Collections](#)
  - [About Special Collections](#)
  - [All Special Collections](#)
- [for Authors](#)
  - [General Information](#)
  - [Submission Guidelines](#)
  - [Peer Review and Publication](#)
  - [Copyright Information](#)
  - [Review Process](#)
  - [Submit a Paper](#)
  - [Submit a Letter](#)
  - [My Author Account](#)
- [for Readers](#)
  - [Get Email Alerts](#)
  - [How to cite DR](#)
- [About the Journal](#)
  - [Purpose](#)
  - [From the Publisher and Editor](#)
  - [Who's Who](#)
  - [Our Reviewers](#)
  - [Contact Us](#)
  - [Copyright & Legal](#)
  - [Privacy Policy](#)

Search DR journal and we

## **Volume 26 - Article 14 | Pages 319–330**

# **Stationary populations with below-replacement fertility**

By [Carl Schmertmann](#)

[Download PDF](#) [Submit a Response Letter](#)



Date received: 18 May 2011

Date published: 18 Apr 2012

Word count: 1961

Keywords: [Austria](#), [below-replacement fertility](#), [dependency ratios](#), [formal demography](#), [immigration](#), [stationary population](#)

DOI: [10.4054/DemRes.2012.26.14](#)

Additional files: [Austria.SI](#) (r file, 5 kB)

[Austria.SIdata](#) (csv file, 4 kB)

Weblink: [All publications in the ongoing Special Collection 8 "Formal Relationships" can be found at http://www.demographic-research.org/special/8/](#)

## Abstract

**Background:** A population with sustained below-replacement fertility and constant immigration eventually becomes stationary. Stationary-through-immigration (SI) populations have unusual age structures that depend on the distribution of immigrants' arrival ages.

**Objective:** I summarize known formal relationships between the distribution of immigrants' entry ages and the long-run size and structure of SI populations. I clarify a previously published result about SI dependency ratios.

**Results:** The long-run size and age structure of an SI population depend on the remaining life expectancies of arriving immigrants, but are also sensitive to the expected numbers of native children born after arrival. Numerical calculations with contemporary Austrian data show (1) contrary to previously published results, immigration flows need not be concentrated in early working ages in order to ensure low overall dependency, and (2) the SI dependency ratio is minimized when all immigrants are in their mid-30s.

## Author's Affiliation

[Carl Schmertmann](#) - Florida State University, United States of America [[Email](#)]

## Other articles by the same author/authors in Demographic Research

» [Quadratic spline fits by nonlinear least squares](#)

Volume 12 - Article 5

» [A system of model fertility schedules with graphically intuitive parameters](#)

Volume 9 - Article 5

» [Estimating Parametric Fertility Models with Open Birth Interval Data](#)

Volume 1 - Article 5

## Most recent similar articles in Demographic Research

» [The force of mortality by life lived is the force of increment by life left in stationary populations](#)

Volume 32 - Article 29 | Keywords: [formal demography](#), [stationary population](#)

» [Perturbation analysis of nonlinear matrix population models](#)

Volume 18 - Article 3 | Keywords: [dependency ratios](#), [immigration](#)

» [Child poverty across immigrant generations in the United States, 1993–2016: Evidence using the official and supplemental poverty measures](#)

Volume 39 - Article 40 | Keywords: [immigration](#)

» [The direct and indirect impact of international migration on the population ageing process: A formal analysis and its application to Poland](#)

Volume 38 - Article 43 | Keywords: [immigration](#)

» [Gender differences in educational adaptation of immigrant-origin youth in the United States](#)

Volume 38 - Article 39 | Keywords: [immigration](#)

## Articles

» [Current Volume](#)

» [Older Volumes](#)

» [Volume 26](#)

» [Editor's Choice](#)

» [Replicable Articles](#)

» [by Author](#)

» [by Subject](#)

» [Search](#)

## Citations

Cited References: 10

» [View the references of this article](#)

Download to Citation Manager

» [RIS format](#)

» [BibTeX format](#)

## Similar Articles

PubMed

[»Articles by Carl Schmertmann](#)

Google Scholar

[»Articles by Carl Schmertmann](#)

## Jump to Article

Volume

Page

Volume

Article ID

© 1999–2018 [Max Planck Society](#)

- [Articles](#)
- [Current Volume](#)
- [Older Volumes](#)
- [Editor's Choice](#)
- [Replicable Articles](#)
- [by Author](#)
- [by Subject](#)
- [Search](#)
  
- [Special Collections](#)
- [About Special Collections](#)
- [All Special Collections](#)
  
- [for Authors](#)
- [General Information](#)
- [Submission Guidelines](#)
- [Peer Review and Publication](#)
- [Copyright Information](#)
- [Review Process](#)
- [Submit a Paper](#)
- [Submit a Letter](#)
- [My Author Account](#)
  
- [for Readers](#)
- [Get Email Alerts](#)
- [How to cite DR](#)
  
- [About the Journal](#)

- [Purpose](#)
- [From the Publisher and Editor](#)
- [Who's Who](#)
- [Our Reviewers](#)
- [Contact Us](#)
- [Copyright & Legal](#)
- [Privacy Policy](#)