

Comments on: A. Armstrong, N. Draper, and E. Westerhout, The impact of demographic uncertainty on public finances in the Netherlands

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Outline

- 1 What do ADW do in this paper?
- 2 Destructive comments
 - PEP
 - GAMMA
 - Gamma & PEP
- 3 Constructive comments
- 4 Concluding remarks

What?

- use tool from statistical demography: stochastic population forecasting as alternative to scenario analysis
- “black box” statistical approach yields cohort-specific estimates for fertility rates, mortality rates, and net migration rates
- demographic developments independent of economic variables
- after 50 years demography deterministic and fixed (uncertainty ceases to exist)
- throw away those simulations that even ADW find hard to swallow (105 out of 501 – note the symmetry!)
- use a standard CGE model, called GAMMA, and run it (501-minus-105>equals) 359 (?) times
- present summary statistics and wegde-like diagrams for different percentiles

On PEP

- two-way causality ignored: fertility, mortality, and net migration do depend on economic factors
- what statistical criterion do you use to throw out 105 observations?
 - Why not 210? Or 315? Why rule out new baby boom?
 - Bayesians posing as classical statisticians?
 - NL with 100 million inhabitants in 2205 has no effect on model outcome: doesn't that worry you?
- is there any empirical evidence that fertility, mortality, and net migration are lognormal?

On PEP

- how do you know that PEP gives us any better demographic projections than older demographic methods (cf. remark on page 7 regarding past “bloopers” by demographers)
- pattern of life-expectancy at birth on page 8 runs foul of the Lee-Carter findings. Where is the upward trend in life expectancy?
- to what extent is focussing on percentiles of the distribution any different from scenarios?

On Γ

- deterministic computable general equilibrium (CGE) model that would have been “state-of-the-art” in mid 1980s
- strange/disappointing/unambitious features (given that it is CGE):
 - actuarially fair annuities
 - no borrowing constraints
 - exogenous age-productivity profile
 - exogenous taste parameters to get hump-shaped consumption
 - constant path of world interest rate?
 - model calibrated in (demographic and/or economic) steady-state?
- more like a pimped up spreadsheet than an economic model

On Γ and PEP

- treatment demographic uncertainty with deterministic model inconsistent (remarks on page 7 unconvincing)
- economic agents face inherently stochastic problem:
 - if there is a probability that government finances are unsustainable, agents will compute probability of tax/spending reforms in the future
 - world interest rate stochastic (and quantitatively more important?)
 - labour productivity stochastic
 - infrequent large shocks: clash of civilizations? new baby boom?

On Γ and PEP

- lack of propagation: path of elderly dependency ratio very similar to paths of various types of public expenditure
- (labour) income tax can be used to tax retired (cf. Bos)
- probabilistic sustainability: why should current policy makers worry if there is an $x\%$ probability that finances are not-sustainable between now and 2050?

Recommendations from an outsider

- drop PEP: does not add anything useful (that is actually credible)
- develop scenarios
 - economic effects on fertility rates, mortality rates, and net migration rates are taken into account (link with growth & development literature)
 - interdisciplinary experts (demographers, medical experts, sexologists, sociologists, historians, economists, astrologists)
 - weight scenarios with (subjective) probabilities

Recommendations from an outsider

- use small-scale (“Mickey Mouse”) model to demonstrate order-of-magnitude of the effects: you focus on very long-run phenomena
 - bigger is not necessarily better
 - include also economic uncertainty
 - recognize stochastic decision making by economic agents
 - include realistic features: endogenous human capital accumulation, imperfect/absent annuities
 - try to identify fiscal policy reaction functions that are robust to demographic change
- then and only then: dress up Γ and check your results with all details of the tax- and pension systems included

To conclude

- present paper is unconvincing
- given Netspar's huge investment, it can only get better!