
Scuola di Dottorato in Scienze Statistiche
Corso di Modelli Statistici: Studi di Caso (Modulo n.4)

Stochastic Population Forecasting

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Calendario delle lezioni

Martedì	4 luglio 2006,	Aula Cucconi	10.30 –12.30	-	Aula Tesisti	14.30 –16.30
Mercoledì	5 luglio 2006,	Aula Cucconi	10.30 –12.30	-	Aula Cucconi	14.30 – 16.30
Giovedì	6 luglio 2006,	Aula Tesisti	10.30 – 14.30			
Venerdì	7 luglio 2006,	Aula Cucconi	9.30 – 10.30			

Programma

Why stochastic population forecasts are necessary. General empirical evidence. The cohort component method. Assumptions, summary measures. Breakdown of the scenario method

Principles of Stochastic Population Forecasting. Correlations across components, time, age, sexes, regions Analytical vs simulation.

Time series (ARIMA, ARCH, GARCH). Empirical errors to construct intervals. Naïve forecasts to construct intervals.

Alho's Scaled model of error

UPE-results: EEA+, Italy

PEP: Experiment with a stochastic forecast for Italy

Challenges for Stochastic Population Forecasting. Course evaluation

Letture consigliate

- Keilman (2005) “Erroneous population forecasts” Manuscript June 2005.
- Chapter 7 of National Research Council (2000) *Beyond six billion: Forecasting the world's population*. Panel on Population Projections. J. Bongaarts and R. Bulatao (eds.). Committee on Population, Commission on Behavioral and Social Sciences and Education. Washington DC: National Academy Press. Internet <http://books.nap.edu/books/0309069904/html/index.html> .
- Keilman and Pham (2004) “Time series errors and empirical errors in fertility forecasts in the Nordic countries” *International Statistical Review* 72(1) 5-18
- Chapter 4 of Keilman, N. and D. Q. Pham (2004) Empirical errors and predicted errors in fertility, mortality and migration forecasts in the European Economic Area. Discussion Paper no. 386. Oslo: Statistics Norway. Internet <http://www.ssb.no/publikasjoner/DP/pdf/dp386.pdf>.
- Alders, Keilman and Cruijsen (2006). ‘Assumptions for long-term stochastic population forecasts in 18 European countries’, submitted to *European Journal of Population*. In particular Appendix 1 and 2