

Demographic Forecasting

Demographic Forecasting introduces new statistical tools that can greatly improve forecasts of population death rates. Mortality forecasting is used in a wide variety of academic fields, and for policymaking in global health, social security and retirement planning, and other areas. Federico Girosi and Gary King provide an innovative framework for forecasting age-sex-country-cause-specific variables that makes it possible to incorporate more information than standard approaches. These new methods more generally make it possible to include different explanatory variables in a time-series regression for each cross section while still borrowing strength from one regression to improve the estimation of all. The authors show that many existing Bayesian models with explanatory variables use prior densities that incorrectly formalize prior knowledge, and they show how to avoid these problems. They also explain how to incorporate a great deal of demographic knowledge into models with many fewer adjustable parameters than classic Bayesian approaches, and develop models with Bayesian priors in the presence of partial prior ignorance.

By showing how to include more information in statistical models, *Demographic Forecasting* carries broad statistical implications for social scientists, statisticians, demographers, public-health experts, policymakers, and industry analysts.

- Introduces methods to improve forecasts of mortality rates and similar variables
- Provides innovative tools for more effective statistical modeling
- Makes available free open-source software and replication data
- Includes full-color graphics, a complete glossary of symbols, a self-contained math refresher, and more