

Estimation and Nonparametric Testing of Heterogeneous Life Data Models

by

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We consider heterogeneous life data models and introduce a new visual inspection technique capable of detecting the credibility of our model assumptions. Our technique is based on a transformed data approach, where the density of the transformed data should be close to the uniform distribution when our model assumptions are correct. To estimate this filtered density estimator on the transform axis we take advantage of the recently defined local linear density estimator based on filtered data of Nielsen, Tanggaard and Jones (2009). We apply our method to mortality data and relate it to the recently published SAINT model, see Jarner and Kryger (2009), that is real life asset-liability model used by one of the major European pension funds.

Literature:

Jarner, S.F., and Kryger, E.M. (2009). Modelling adult mortality in small populations: The SAINT model. Discussion Paper PI-0902, the Pensions Institute, Cass Business School, City University London, UK. Available online at <http://www.pensions-institute.org/workingpapers/wp0902.pdf>.

Nielsen, J. P., Tanggaard, C., and Jones, M.C. (2009). Local linear density estimation for filtered survival data. *Statistics*, 43(2), 167-186.