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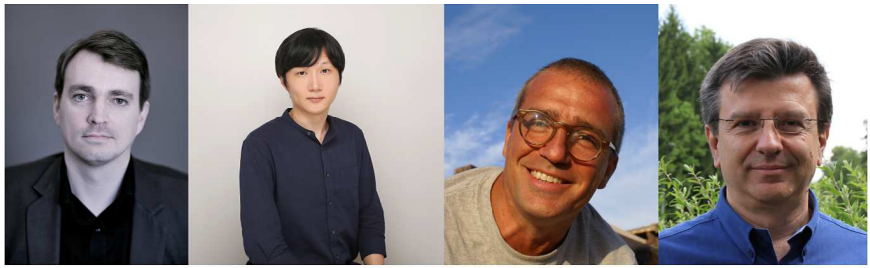
TJALLING C. KOOPMANS ECONOMETRIC THEORY PRIZE 2018 – 2020



Brendan K. Beare | Won-Ki Seo | Massimo Franchi | Paolo Paruolo

Econometric Theory is proud to announce the winning articles for "The Tjalling C. Koopmans *Econometric Theory* Prize" over the period 2018-2020 inclusive. The prize is kindly supported by the Cowles Foundation, Yale University. It is named in honor of Tjalling C. Koopmans, the 1975 Nobel Laureate in Economic Science. The selection of the winning articles was made by the Advisory Board of the Journal and all articles published in *Econometric Theory* over 2018-2020 inclusive were candidates for the prize, except those that were authored or coauthored by the Editor and members of the Advisory Board. The prize is accompanied by a financial award of $1,000 to the winning authors.

The winning articles and citation (written by the Advisory Board and Editor) are as follows:

Beare, B.K. and W.-K. Seo (2020): "Representation of I(1) and I(2) Autoregressive Hilbertian Processes", *Econometric Theory*, Volume 36, Issue 05, October 2020, 773-802.
Franchi, M. and P. Paruolo (2020): "Cointegration in Functional Autoregressive Processes", *Econometric Theory,* Volume 36, Issue 05, October 2020, 803-839.

Citation

These articles provide a representation theory for autoregressive models of functional time series, with an emphasis on integration and cointegration. To model functional time series, random variables take values in a complex separable Hilbert space H (thus admitting certain classes of functions, rather than conventional n-dimensional vectors) with linear operators from H to H as autoregressive coefficients. Correspondingly, the autoregressive polynomial A(z) is an operator-valued function of the complex variable z. Analogous to the "classical" case in integration,

A(z) is assumed invertible in the closed unit disc except at z=1. The integration and cointegration properties of the corresponding process are based on an analysis of A(z) at z=1. The results obtained show that, under the assumption that 1 is an eigenvalue of finite type of A(z), the integration and cointegration properties of (generally infinite-dimensional) H-valued processes are the same as for the classical finite-dimensional VAR case - except for the number of cointegrating relations being infinite.

Cambridge University Press joins me in congratulating the authors on their success in receiving this award.

Peter C. B. Phillips
June 2021

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