

Hong Kong - Singapore joint Seminar Series in Financial Mathematics/Engineering

Income and wealth distribution in macroeconomics: A continuous-time approach

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Abstract

We recast the Aiyagari-Bewley-Huggett model of income and wealth distribution in continuous time. This workhorse model-as well as heterogeneous agent models more generally-then boils down to a system of partial differential equations, a fact we take advantage of to make two types of contributions. First, a number of new theoretical results: (1) an analytic characterization of the consumption and saving behaviors of the poor, particularly their marginal propensities to consume; (2) a closed-form solution for the wealth distribution in a special case with two income types; (3) a proof that there is a unique stationary equilibrium if the intertemporal elasticity of substitution is weakly greater than one. Second, we develop a simple, efficient and portable algorithm for numerically solving for equilibria in a wide class of heterogeneous agent models, including-but not limited to-the Aiyagari-Bewley-Huggett model.

About the speaker

Dr. Han Jiequn is currently a Flatiron Research Fellow at the Center for Computational Mathematics, Flatiron Institute. Dr. Han obtained his Ph.D. degree in applied mathematics from the Program in Applied and Computational Mathematics (PACM), Princeton University in June 2018, advised by Prof. Weinan E. Dr. Han's research draws inspiration from various disciplines of science and is devoted to solving high-dimensional problems arising from scientific computing. His current research interests mainly focus on solving high-dimensional partial differential equations and machine learning based-multiscale modelling.

Date

April 27, 2023, Thursday
(HK SAR)

Time

10:30 am– 11:30 am (HK SAR)

Zoom

<https://hkust.zoom.us/j/97297906033?pwd=V2hSR0tyaWJ1eWFJS2RnZVdYNkhWUT09>

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