

Non-Ergodic Economic Dynamics

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Abstract

Only in more recent epistemological analyses of economics, ergodicity is recognised as central for neoclassical and today's mainstream economics. [2, 3] count ergodicity to the ‘Grundaxiome’. Despite its foundational character, the assumption of ergodicity is largely overlooked while discussing the intellectual history of the discipline. Due to this disregard, the disciplinary oblivion explains the absence of ergodicity from the curriculum – although intimately intertwined with the equilibrium concept. Contrasted by such popular assumptions like rational expectations formation, representative agent, efficient markets, perfect competition, etc., that every student is aware of. Nevertheless, ergodicity is more fundamental than all of the mentioned assumptions taken together and the study of non-ergodicity yields interesting insights in intellectual history and epistemology [2, 3] on what we can infer from data on economic dynamics.

Astonishingly, a recent debate in the *Journal of Post Keynesian Economics* [5, 1] centers around the ergodic/non-ergodic approach for economic dynamics. [6] seeks to resolve the debate in pointing to the phenomenon of ergodic chaos, which has the potential to generate non-stationary dynamics without having to utilise non-ergodicity. The non-ergodic case is the more general, whereas the ergodic case is much easier to handle mathematically. Ergodic chaotic dynamics and how they generate non-stationary dynamics point to a complex interplay of deterministic dynamics and unpredictability of its evolution.

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Capitalistic economies are downright defined through uncertainty about their evolution, their potential of innovation, and so are its very centerpiece financial markets. The most important economic and financial processes are unpredictable, this puts emphasis on the crucial role of time through which a certain amount of uncertainty enters into economic reasoning. This contribution seeks to clarify this specific relation between the idea of (non-)ergodicity which is drawn from statistical mechanics and its role in and for economics and finance. I identify a process of symmetry breaking and study possible drivers of it.[4]

JEL Classification: B16, B41, B52, B59, C62, D81, G17

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