

NEW DEVELOPMENTS IN AGENT-BASED MODELS OF WEALTH DISTRIBUTION

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ABSTRACT

Agent-based models of wealth distribution, employing simple, idealized binary transactions between pairs of agents were first proposed in the 1980s, and methods of statistical physics have been applied to their analysis since the turn of the century. This presentation will describe one such model, the recently developed Affine Wealth Model, that (i) demonstrates remarkable agreement with empirical wealth data, (ii) exhibits rich phenomenology, including a second-order phase transition to a wealth-condensed state, (iii) sheds new light on the precise nature of oligarchy and the role of chance in wealth accumulation, (iv) is predictive of measurable quantities such as upward mobility, agent flux, and wealth flux, and (v) suggests new empirical tests of microeconomic theory.

Keywords: wealth distribution, wealth inequality, agent-based models, asset-exchange models, upward mobility, wealth condensation, oligarchy, microeconomic theory