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Abstract:

This chapter reviews recent research adopting methods from statistical physics in theoretical or empirical work in economics and finance. The bulk of what has recently become known as 'econophysics' in broader circles draws its motivation from observed scaling laws in financial markets and the abundance of data available from the economy's financial sphere. Sec. 2 of this review presents the robust power laws encountered in financial economics and discusses potential explanations for scaling in finance derived from models of stochastic interactions of traders. Sec. 3 provides an overview over other applications of statistical physics methodology in finance and attempts to evaluate the impact they have had so far on financial economics. With the following section, the review turns to recent work on the emergence of wealth and income heterogeneity and the recent inception of new strands of research on this topic, both within econophysics and the neoclassical economics tradition. Sec. 5 reviews the new stylized facts that have been identified in cross-sectional data of firm characteristics and agent-based approaches to industrial organization and macroeconomic dynamics that have been motivated by these findings. We conclude with an assessment of the major methodological contributions of this new strand of research.

Subjects:

Power laws
Agent-based models

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