

Abstract Submitted
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Econo-Thermodynamics: The Nature of Economic Interactions

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Physicists often model economic interactions like collisions of atoms in gases: by interaction one agent gains, the other loses. This leads to a Boltzmann distribution of capital, which has been observed in wealth distributions of different countries. However, economists object: no economic agent will attend a market in which he gets robbed! This conflict may be resolved by writing basic laws of economics into terms of calculus. In these terms the daily struggle for survival of all economic systems turns out to be a Carnot cycle that is driven by energy: heat pumps and economic production depend on oil, GNP and oil consumption run parallel for all countries. Motors and markets are based on the same laws of calculus (macro-economics) and statistics (micro-economics). Economic interactions mean exploiting a third party (nature) and are indeed close to robbing! A baker sells bread to his customers, but the flour comes from nature. Banks sells loans to investors, but the money comes from savers. Econo-thermodynamics is a thrilling new interdisciplinary field.

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