

Two-class structure of income distribution in the USA: exponential bulk and power-law tail

Victor M. Yakovenko and A. Christian Silva

*Department of Physics, University of Maryland, College Park, MD 20742-4111,
USA*

Corresponding author e-mail: yakovenk@physics.umd.edu

Personal income distribution in the USA has a well-defined two-class structure. The majority of population (97-99%) belongs to the lower class characterized by the exponential Boltzmann-Gibbs ("thermal") distribution, whereas the upper class (1-3% of population) has a Pareto power-law ("superthermal") distribution. By analyzing income data from the US tax agency (Internal Revenue Service) for 1983-2001 [1], we show that the "thermal" part of the distribution is stationary in time, save for a gradual increase of the income temperature (the average income in nominal dollars). On the other hand, the "superthermal" tail is non-stationary, swelling and shrinking with the course of the stock market. We discuss the concept of equilibrium inequality in a society, based on the principle of maximal entropy, and quantitatively show that it applies to the majority of population.

[1] A. C. Silva and V. M. Yakovenko, "Temporal evolution of the 'thermal' and 'superthermal' income classes in the USA during 1983-2001", *Europhysics Letters*, v. 69, pp. 304-310 (2005).