THE KUZNETS CURVE AND THE INEQUALITY PROCESS

by

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ABSTRACT

Four economists, Mauro Gallegati, Thomas Lux, Steven Keen and Paul Ormerod, published a paper after the 2005 Econophysics Colloquium condemning research on conservative particle systems as models of income and wealth distribution. Their critique was covered in a featured news article in **Nature**. Of their four criticisms, they flagged as the most important the incompatibility of conservative particle system models with the paradigm of economics. A particle system model of wealth and income distribution is an hypothesized universal statistical law of income and wealth distribution. Gallegat et al. think that the economic literature on the Kuznets Curve provides evidence that the existence of a universal statistical law of income distribution is very unlikely. The Kuznets Curve is the graph of the Gini ratio of personal wage income against the movement of workers from rural subsistence agriculture into more modern sectors of the economy. Its shape is an initial uptick in the Gini ratio from a level higher than that characteristic of a modern economy, followed by a long decline to a modern level as an increasing proportion of the labor force enters more modern sectors. The pattern is often called an "inverted U" although empirically it is skewed to the right. The present paper shows that the Kuznets Curve can be derived from the Inequality Process (IP), a conservative particle system. The IP reproduces the Kuznets Curve as the Gini ratio of a mixture of two IP stationary distributions, one characteristic of the wage income distribution of workers in a poor, rural area, the other of workers in the modern sector, as the mixing weight goes from 100% agrarian to 100% modern. The greater purchasing power of money in poor rural areas is taken into account. The IP has previously been shown to mimic other empirical income and wealth phenomena parsimoniously.

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