

Title: Power Law Distribution of Duration and Magnitude of Recessions in Capitalist Economies: Breakdown of Scaling

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ABSTRACT

Power law distributions of macroscopic observables are ubiquitous in both the natural and social sciences. They are indicative of correlated, cooperative phenomena between groups of interacting agents at the microscopic level. In this paper we argue that when one is considering aggregate macroeconomic data (annual growth rates in real per capita GDP in the seventeen leading capitalist economies from 1870 through to 1994) the magnitude and duration of recessions over the business cycle do indeed follow power law like behaviour for a significant proportion of the data (demonstrating the existence of cooperative phenomena amongst economic agents). Crucially, however, there are systematic deviations from this behaviour when one considers the frequency of occurrence of large recessions. Under these circumstances the power law scaling breaks down. It is argued that it is the adaptive behaviour of the agents (their ability to recognise the changing economic environment) which modifies their cooperative behaviour.

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