

## 論題

# A Schumpeterian Microfoundation of the Geometric Brownian Motion of Firm Size and Zipf's Law

春山 鉄源

## 要旨

A geometric Brownian motion is often used in dynamic economic analysis when variables of interest grow stochastically. What economic mechanisms are working behind? What economic forces contribute to shaping such stochastic processes? The existing studies leave those questions unanswered. The present paper represents an effort to answer them, focusing upon the firm size distribution. Using the otherwise standard Schumpeterian growth model, Poisson-distributed innovations in “many” sectors give rise to the geometric Brownian motion of a firm size via the Lindberg-Feller Central Limit Theorem. The resulting distribution of firm sizes is Pareto, and the Pareto exponent can take a low or high value. Local stability analysis reveals that the lower Pareto exponent, close to 1, is locally stable.