

## **The Economic System Seen As A Living System: A Lotka-Volterra Framework (80-93)**

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This paper describes the overall dynamic behavior of an economic system by viewing it as analogous to a living system with productive aims involving goods and services. The focus is on the ubiquitous macro-behavior common to all production systems like a company, a state or a country. The mathematical structure utilized is the well-known Lotka-Volterra set of nonlinear differential equations connecting the physical production capacity and the corresponding production, both expressed in the same monetary basis. The novelty production factor is represented by the parameter variation utilized in the study of living systems. The example presented in this paper is the case of Brazil and the basic variables are the Capital Stock and the Gross Domestic Product. Aspects such as dissipative structures, economic non-equilibrium, multi-periodicity and irregularities in business cycles can be viewed within this simple approach. The model can be useful for analyzing investment policies and scenarios from an aggregated perspective and thereby strategic assessment of entrepreneurial ventures including social entrepreneurship.