

"Macroeconomic Relaxation: Adjustment Processes of Hierarchical Economic Structures"
by Raymond J. Hawkins and Masanao Aoki

I have the following comments on this paper, which may be useful for the authors to revise it:

1) What is the equilibrium state in an economic system?

The linear response theory is constructed on the basis of an equilibrium state. Nobody doubts existence of such a state for physical systems excluding those very unstable with chaotic nature; the physical equilibrium states are well defined. I understand your equilibrium state is an economic situation in absence of demand. But this is not acceptable to me, because I think demand plays a critical role in establishing any economic system, otherwise nobody can have motivation to work. In other words, I assume that an economic system responds to demand in a highly non-linear manner or even shows unstable behavior against applied demand if the demand-free state is adopted as an equilibrium state.

2) Should the causality be satisfied in the linear response relations (2) and (14)?

Dynamics of physical systems certainly is constrained by the causality relation. But I wonder if the causality is still a valid constraint in formulating the economic linear response theory. Since economic agents are intellectual in contrast to physical particles, they may determine their behaviors thinking about future.

3) Is there any relationship between hierarchical dynamics and superstatistics?

Hierarchical dynamics is a very attractive idea to address complicated economic phenomena. Very recently it has been empirically confirmed that labor productivity has a distribution with power-law tail in the efficient side. An idea of superstatistics was borrowed from physics to account for the power-law behavior. Please refer to the following papers:

<http://arxiv.org/abs/0809.3541>

<http://www.economics-ejournal.org/economics/discussionpapers/2008-42>

Superstatistics emphasizes spatial and temporal inhomogeneity in physical conditions such as temperature and density. In the above- mentioned papers, it is assumed that heterogeneity in economic temperature arising from fluctuating demand. Could you say anything about possible relationship between hierarchical dynamics and superstatistics?