797N – Macro 3

Fall 2015

Problem set 1

1. "The time pattern that an individual supplies to the market is something that, in a very clear sense, he chooses. ... At some level of detail, there is no question that social convention and institutional structures affect these patterns, but conventions and institutions do not simply come out of the blue, arbitrarily imposing themselves on individual agents. On the contrary, institutions and customs are designed precisely in order to aid in matching preferences and opportunities satisfactorily. ... In order for such an extension [which took into account the complicated arrangements in actual labor and product markets, PS] to account for observed employment fluctuations, *in addition to* whatever other institutional features it succeeded in explaining, it would have to explain why, given their opportunities, people *prefer* arrangements involving erratic employment patterns. Ignoring this simple point seems to me simply bad social science: an attempt to explain important aspects of human behavior without reference either to what people like or what they are capable of doing." (Lucas, 1981, p. 4)

   How would you respond to this claim?

2. To justify rational expectations, Lucas asserts that "agents' responses become predictable to outside observers only when there can be some confidence that agents and observers share a common view of the nature of shocks" (Lucas 1976, p. 125).

   How would you respond?

3. "Given the serious problems of aggregation highlighted by Kirman, the best way forward is to try to avoid aggregation altogether." Do you agree with this statement? Explain your reasons.

4. Dutt (2003, p.57) describes the "neostructuralist" approach as defined by

   "(1) starting with some basic and commonly used accounting identities; (2) adding simple rules of behavior of individuals or groups derived from detailed empirical investigation; and (3) examining their consequences to analyze the performance and evolution of the system"

   How would Lucas react? What do you think of this approach?

5. Find the stationary solution, analyze its stability properties and construct phase diagrams for each of the following systems:

(a)

$$\begin{aligned} \dot{x} &= 2x - y \\ \dot{y} &= x - y \end{aligned}$$

(b)

$$\begin{aligned} \dot{x} &= -x + y \\ \dot{y} &= -x - y \end{aligned}$$

(c)

$$\begin{aligned} \dot{x} &= \exp x - y \\ \dot{y} &= -x - y + 1 \end{aligned}$$

(d)

$$\begin{aligned} \dot{x} &= x - y \\ \dot{y} &= 2x - 0.5y \end{aligned}$$

(e)

$$\begin{aligned} \dot{x} &= x - y \\ \dot{y} &= x - y + 2 \end{aligned}$$