Exercise 5 (Team/Individual Exercise, 14 Points) **Leigh Tesfatsion**
DUE: Tuesday, March 10, 11:00am **Econ 308, Spring 2009**

**** PLEASE NOTE: LATE ASSIGNMENTS WILL NOT BE ACCEPTED - NO EXCEPTIONS!**

Zero Intelligence (ZI) Market Trading Exercise: NETLOGO VERSION

Basic References:

1 ** Mark McBride's Zero-Intelligence (ZI) Trading Demo (Java Applet/NetLogo Model)
http://mcbridme.sba.muohio.edu/ace/labs/zitrade/zitradenetlogo.html

2 ** Zero-Intelligence Trader Lab – NetLogo Exercise (by Mark McBride)
http://mcbridme.sba.muohio.edu/netlogo/ZITraderLab.pdf

3 ** Dhananjay K. Gode and Shyam Sunder, **"Allocative Efficiency of Markets with Zero-Intelligence Traders: Markets as a Partial Substitute for Individual Rationality"**, *Journal of Political Economy*, Vol. 101, No. 1, 1993, 119-137.
http://www.econ.iastate.edu/tesfatsi/Gode and Sunder-JPE.pdf
(Caution:Large Download, 1.4MB)

4 * S. Railsback, S. Lytinen, and S. Jackson, **StupidModel: A Template Model for ABM Platforms**, http://condor.depaul.edu/∼slytinen/abm/StupidModel/

EXERCISE OVERVIEW:

This exercise asks you to carry out two model exercises available at [2] using the McBride ZI Trading demo [1] developed in NetLogo for "budget-constrained zero intelligence" (ZI-C) traders.

In a subsequent assignment you will be asked to make use of this demo to develop and analyze experiments that compare outcomes with ZI-C traders against outcomes when traders have some learning capabilities.

PLEASE SEE THE BACK OF THIS SHEET FOR EXERCISE DETAILS

EXERCISE DETAILS:

Part A: (3 Points) Using information provided at the McBride demo homepage [1] and in the Gode-Sunder article [3], develop flow diagrams detailing the the logical flow of events in the McBride ZI Trading demo for ZI-C trading and in the Gode-Sunder experiments with computational ZI-C traders. Use these flow diagrams to explain carefully the extent to which the McBride demo [1] faithfully captures (or fails to capture) the Gode-Sunder experimental design [3] for ZI-C trading.

(NOTE: You do not need to develop flow diagrams for the case in which ZI trades are conducted in the *absence* of budget constraints. Just focus on the ZI-C cases in [1] and [3].

Part B: (4 Points) Carry out the exercise for "Model 1" given in the Lab Exercise [2].

NOTE: This Model 1 exercise consists of five steps. In the first four steps you are asked to conduct various simulation runs, and to record various outputs generated during the course of these runs. The final step 5 asks you to describe and analyze aspects of these outputs. **For Part B, turn in a concise but careful presentation of your recorded output for the first four steps as well as your description and analysis of outputs for the final step 5.**

Part C: (7 Points) Carry out the exercise for "Model 2" given in the Lab Exercise [2].

NOTE: This Model 2 exercise consists of three steps. In the first two steps you are asked to conduct various simulation runs for a MODIFIED version of Model 1, and to record various outputs generated during the course of these runs. In the final step 3 you are asked to describe and analyze aspects of these outputs. **For Part C, turn in a concise but careful presentation of your recorded output for the first two steps as well as your description and analysis of outputs for the final step 3.**