Econ 702, Spring 2007
Problem set 6
Due Tuesday March, 27th

Problem 1. *Consider the model of industry equilibrium as described in Class. Shocks to productivity have a finite support and follow a Markov process. Also, there is a fixed cost of operating each period c_f, so the firm has the option of quitting the market forever.*

1. *Show the existence of a reservation property for the firm, i.e., there is a unique s^* such that if $s < s^*$, the firm quits the market and stays otherwise. State clearly all your assumptions on parameters.*

2. *Define transitions and the condition for the stationary distribution.*

Problem 2. *In the 'goat-farmer' economy, with only two income shocks $\{s_l, s_h\}$ with $s_l < s_h$ and $\beta/q < 1$*

1. *Is the decision rule ($g(s,a)$) monotonic in a? What are minimal sufficient conditions to prove this?*

2. *Is $g(s_l, \cdot)$ concave? what about $g(s_h, \cdot)$?*

Problem 3. *In the general setting of the goat farmer economy, we know that total assets in the economy is given by $\int_{SxA} adX(s,a)$. Compute a formula for the share of wealth owned by the richest x% of farmers.*

Problem 4. *In the Aiyagari economy*

1. *Relate total labor input with fundamentals*

2. *Define a Recursive stationary equilibrium*

Problem 5. *Let $S = \{e, u\}$ where e is employed and u is unemployed. The transition probabilities are given by $\Gamma_{ee}, \Gamma uu$ and its complements. Calibrate the transition probabilities, such that in steady state, unemployment is 6% and average duration of unemployment is two periods*