MICROECONOMICS OF DEVELOPMENT  
Assignment 1  
Due on Tuesday September 18, 2007

Production decisions under credit constraint

I. Consider a two period household model. The household utility function $U(c_1, c_2) = u(c_1) + u(c_2)$ is function of consumption $c$ in each period. The household has an initial endowment of liquid asset $y_1$, and land holdings $A$. Suppose there is no land market, but that labor and product markets work smoothly. The household can combine land and labor during period 1 to produce an output available in period 2. The production function $q(A, L)$ has constant return to scale.

(a) Suppose that credit markets work. The household can either borrow or save any amount $B$ at a fixed interest rate $r$. Write the household optimization problem. Derive the first order conditions. Show that yield is independent of landholdings and liquid assets.

(b) Suppose now that households cannot borrow more that an amount $\bar{B}$. Write the optimization problem. Write the (Kuhn-Tucker) first-order conditions. Show that yield may now depend on landholdings and liquid assets.

(c) What other behaviors are affected by the credit market imperfection?

II. Discuss conditions of the credit market that could lead to a situation of borrowing constraint? You do not need to write a formal model, but the reasoning need to be sufficiently complete to be compelling.

III. Propose an empirical analysis that would detect the existence of credit constraint. Be as specific as possible on the estimation strategy. How could one distinguish between the predictions of the model without binding credit constraints and the model in which these constraints are binding? Discuss potential pitfall and possible confounding factors, as one tries to explain real world data using stylized models.