14.771 Development Economics: Microeconomic Issues and Policy Models
Fall 2008

Read the paper "The Shape of Temptation: Implications for the Economic Lives of the Poor" by Abhijit Banerjee and Sendhil Mullainathan. The following questions will make sure that you follow the paper's arguments.

Question 1

Consider a simplified version of the general model presented in the paper. There is no uncertainty, an agent has deterministic labor incomes y_1 and y_2 and can borrow and save at rate of return R. Utility is as given by equation 3 in the paper (but since things are deterministic we don't need to worry about taking expectations.

1. Derive the modified Euler equation for this problem.

2. Now, suppose that agents cannot participate in the credit market, so agents must consume y_1 in the first period and y_2 in the second period. Consider a PDV neutral shift in income: $Rdy_1 + dy_2 = 0$ with $dy_1 < 0$. Assume that $R\delta = 1$ and $y_2 < y_1$. Calculate the associated change in utility for the agent, separating out different effects you can see. How might your answer depend on absolute levels of income (imagine scaling y_1 and y_2 by a variable constant γ). Does your answer differ depending on whether we are in a DTC or NDTC world?

3. Finally, consider the utility of the "period 0" self, who has preferences $u(x_1) + \delta u(x_2)$. Suppose that there are binding credit constraints, so the agent is borrowing exactly $\underline{s}$ at rate R. Will it always be welfare improving (from the perspective of the period 0 self) to loosen these credit constraints? Explain.

Question 2

The poor often save money for parties, such as festivals and weddings, that have no productive value. Can such items be considered temptation goods in the framework of the paper? Explain.

Question 3

Here, we will generalize the model to consider two different types of agents - sophisticated agents, who know that they will spend money on temptation goods every period according to the model, and naive agents, who erroneously believe that they will only buy x goods in the future.

1. How will these two agents differ in terms of savings and investment behavior?

2. Who would appear more time inconsistent based on observational data?

3. How does this compare with sophisticated and naive agents in the hyperbolic discounting model (here, naive agents erroneously believe that in all future periods they will not be hyperbolic).

Question 4

Commitment savings devices (such as SEED and SAFI) have recently enjoyed a substantial amounts of attention in the literature. What does the model in the paper imply about demand for traditional commitment devices (you may think of this as a product that forces a future selves to save more than they would if left to their own devices)? What about other types of commitment? Propose a randomized trial using different types of commitment devices designed to test the temptation goods model versus the quasi-hyperbolic discounting model.