Development Economics
Problem set 4
City University
Spring 2007

Gender inequality and development

Question 1: Fertility and the gender gap

1. Why do economists often assume that the opportunity cost of having children is roughly proportional to the hourly wage times the number of hours parenting?
2. Explain why in developing countries, lower earnings for women on the labor market may keep fertility at a high level.
3. Suppose that in a village, a non-government organization provides men with investment loans. Some observers say that because this improves per capita income in the village, households will have less children as they get richer. Explain why this may not be the case.

Question 2: Human capital investments and the gender gap.

In this exercise, you will study how the cost of borrowing affects the gender gap, like in Garg and Morduch's paper.
Let H denote parents' investment in a child's health. As we discussed, in developing countries, this can be a very important investment for the parents' future. We assume that parents invest in their children's health purely motivated by economic returns.
Let the economic returns for the parents on investments in a boy (m) and a girl (f) be given by:

$R_m(H) = 4H - 2H^2$ (1)

$R_f(H) = 0.5\, R_m(H) = 2H - H^2$ (2)

Thus, we assume that parents perceive that the returns to investing a the health of sons is higher than returns to investment in the health of girls.

Give two reasons why the latter assumption is realistic to think about developing countries.

Assume that the parents have 2 children: one son and one daugther. Let H_f be the health investment in the girl, and H_m the investment in the boy. Thus, they invest a total $(H_f + H_m)$ in their children's health.

1) First, assume that parents can borrow as much as they want, so that they borrow whatever amount $(H_f + H_m)$ they wish at the going interest rate. Then, the cost of investing in children's health is the cost of reimbursing the loan with interest r: $(1+r)(H_f + H_m)$. Therefore, parents choose Hf and Hm to maximize the following objective function:

$$R_m(H_m) + R_f(H_f) - (1+r)(H_m+H_f)$$

- Using the specific functional forms (1) and (2), find the parents choice of H_f and H_m as a function of the interest rate r. Do the parents invest more in their daughter or their son?

- Compute the gender gap, $H_m - H_f$, as a function of the interest rate r.

- What is the effect of a decrease in the interest rate on: parents' investment in their son? Parents' investment in their daughter? On the gender gap?

2) Now, let's assume that parents cannot borrow money. They are financially constrained, and just have an amount of money Y=1 to spend on their children's health. Furthermore, assume that Y is smaller than 1. (don't worry about this assumption, this is just for consistency in this little exercise) Then, they choose H_m and H_f to maximize

$R_m(H_m) + R_f(H_f)$

subject to their budget constraint $H_m + H_f = Y$.

- Find the new levels of investments H_m and H_f as a function of Y.
- What is the effect of a decrease in the interest rate on: parents' investment in their son? Parents' investment in their daughter? On the gender gap?
- Does the effect of Y on the gender gap in this model sound like a realistic prediction? Why?