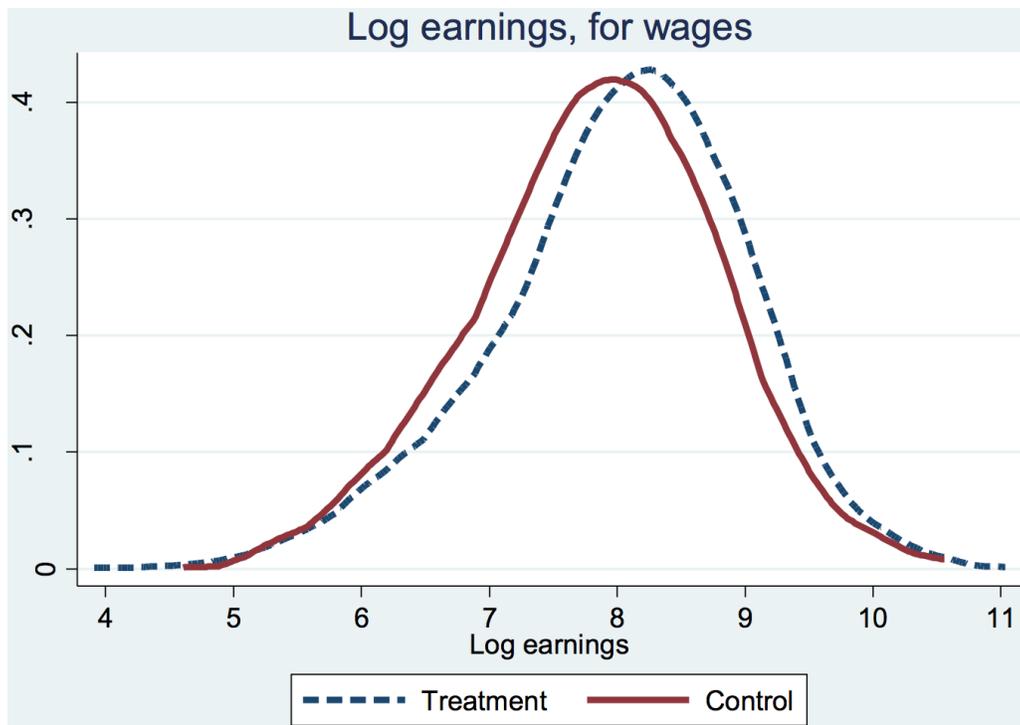


## Seminar 2 – Poverty traps and measurement

1. Measurement of inequality and poverty
  - (a) One of the Millennium Development Goals is to halve the proportion of people whose income is less than one PPP dollar a day by 2015. Why do you think that the United Nations use PPP dollars?
  - (b) What are the advantages and disadvantages of using the headcount ratio as a target in eradicating poverty?
  - (c) In Table 1, we list the incomes of the 10 inhabitants in country A and B.
    - i. Assume that the poverty line is 100. Calculate the head count ratio, the poverty gap ratio (PGR) and the income gap ratio (IGR) of communities A and B.
    - ii. In which of the two communities would you say that poverty is the largest problem?
  - (d) Draw Lorenz curves and calculate the Gini coefficient for the income distributions below. The first set of numbers indicate incomes, while the second set indicates number of people who earn the corresponding income. What are the transfers needed to take you from the one to the other?
    - i. (100, 200, 300, 400); (50, 25, 75, 25)
    - ii. (200, 400, 600, 800); (50, 25, 75, 25)
    - iii. (200, 400, 600, 800); (125, 25, 125, 50)
    - iv. (100, 200, 300, 400); (50, 15, 95, 15)
    - v. (100, 200, 300, 400); (50, 35, 55, 35)
  - (e) Consider the log earnings distribution for the treated and untreated in the deworming experiment of Baird et al, included in Figure 1 below.
    - i. Draw a sketch of the *cumulative distribution functions* from these *probability density functions*.
    - ii. Draw a sketch of the *Lorenz curves* (in terms of log earnings).
    - iii. What is a rough estimate of the impact on earnings and inequality from deworming based on these sketches?
2. **Essay:** How can lack of food trap people in poverty? How important are these mechanisms likely to be?

**Table 1.** Hypothetical income distributions

Individual	Country A	Country B
1	60	89
2	62	90
3	70	91
4	85	92
5	90	97
6	100	98
7	125	99
8	128	100
9	139	102
10	141	142



**Figure 1.** Log earnings distributions of individuals treated and untreated by a deworming experiment in Kenya. Source: Baird et al. 2012.