There are enormous disparities in educational outcomes:

- Around the world
- Across regions in the same country
- By gender within countries
- By income levels
- By urban/rural residence

Education is an investment:

It has benefits:
- ...
- ...
- ...
- ...
- ...
- ...

... and costs:
- ...
- ...
- ...
- ...
Why do some children get an education and others do not?
We will answer this question using a simple model of how parents make educational decisions for their children.

1 A simple model of educational choice

Parents make schooling decisions for their child. Their utility function as a function of schooling \( (S) \) and earnings of the child when he grows up \( (y) \) is:

\[
U(y, S) = m\ln(y) - h(S),
\]

where:
- \( S \) is :
- \( h(S) \) is :
- \( \ln(y) \) is :
- \( m \) is:
- What is the interpretation of this equation?
- Why is \( m \) smaller than 1?
- Why is \( m \) not zero?

The earnings of the child when he grows will be:

\[
\ln(y) = a + b \times S
\]

To understand what this formulation means, derive both side of the equation with respect to \( S \).

This formulation (which is very general in economics) is saying that for each new year of education, the future wage will go up by \( b\% \). \( b \) is called the \textit{economic returns to education}.

The formulation assumes that it is the same for each year, i.e., that returns to education are \textit{linear}. Is it a reasonable assumption? How does it relate to the capacity curve debate?

Finally, we need to specify what the cost of education function looks like. Is it likely to be convex or concave? Is it likely that each year of education costs more or less than the next?
\[ h'(S) = r + \phi(S) \]  
(3)

We are now ready to solve the maximization problem of the parents: replace equation (2) and (3) in equation (1), and take the derivative.

\[ S^* = \frac{mb - r}{\phi} \]  
(4)

Comment on this equation:

- What enters?
- What does NOT enter?

Note: In doing this, we have assumed that parents can pay now for a benefit they will receive later. What are we assuming?

We are now in a position to think about what motivates parents in, or prevents them from, sending their children to school: we have to think about what determine \( m, b, r, \) and \( \phi \).

2 What determines the cost of education?

- Direct costs

- Indirect costs: Opportunity costs

Definition:

Think about how this cost differs across individuals:

- Boys vs Girls
- Urban vs Rural

3 What determines the returns to education?

- The market: Demand and Supply for educated labor

How will it differ for:
– Boys vs Girls
– Urban vs Rural
– Rich vs Poor

• The quality of education.

4 What determines the parental share (m)?

Why do parents value children’s earnings?

It is going to differ for boys and girls. Why? What is $m$ likely to be for a girl? To answer this question, we need to understand how the marriage market works (more on this later!).

5 What we have left out?

• The Credit Market
• Social Norms
• Consumption value of education for the parents
• Anything else?

6 The child’s maximization problem

What would the child’s problem be if he could borrow from his parents (or someone else) to cover the cost of his education, and reimburse it when he starts earning money:

$$U(y, S) = \ln(y) - h(S) + B(S)$$

Two differences:

• The child values his full earnings.

• The child values non-monetary benefits.
• Note: he may also have some higher disutility of schooling!

• How would the education level chosen by the child compare with that chosen by the parents?

• Would the government choose the level chosen by the child or the level chosen by the parents?

• What prevents the preferred level from being chosen?

• What policy could be used to attain or to get closer to the preferred level?

• More broadly, can we think of this as one element of an answer to Andrea’s question: Why not give people money instead of goods?