Facts about Education and Growth

• What is the relation between
  – Education levels and GDP levels
    • Secondary Education
    • Primary Education
  – Education levels and subsequent GDP growth
  – Growth in education and growth in GDP.
Resolving the puzzles: Easterly’s take

• How does he explain the level on level findings?
• How does he explain the growth on levels findings?
• How does he explain the lack of a relationship in the growth on growth findings?
• “education is another magic formula that has managed to live up to expectations”
School Construction: Indonesia (Duflo) - Set Up

- The INPRES school construction program
- Second five year plan (1974-79) - Oil shock
  - A large program:
    - 61,807 primary schools constructed from 1973/74 to 1978/79
- Number of schools multiplied by 2.1 schools for every 500 children
- A change in policy: Before 1973, no construction, ban on recruiting for public service positions
- A program meant to favor low-enrollment regions

- Allocation rule: number of schools constructed in a district proportional to the number of children (ages 7 to 12) not enrolled in primary school
Data and sources of variation

• SUPAS 95: A survey done in 1995, after the children educated in these schools have completed their schooling, and have started working
  – 150,000 men born 1950-1972

• Variables: education, year and region of birth, wages
Sources of variation

• Two factors affect the intensity of the program.
  – **Year of birth**:
    • Born in 1962 or earlier: 12 or older in 1974. Not exposed to the program.
    • What would we find if we compare the education of those born before and after 1962? Would this be a good measure of the impact of the program? Why?
  – **Region of birth**
    • The government was targeting low enrollment regions => substantial variation in program intensity across districts
    • What would we find if we compare regions with high and low construction? Would this be a good measure of the impact of the program? Why?
The “Difference in Differences” methodology

• Basic idea
  – Suppose that there are two regions in the data: a “high program” region, and a “low program” region

• Suppose that we have the age group of the individuals:
  – “young people” born after 1967, who could fully benefit from the schools
  – “old people” born before 1962, who could not benefit at all from the schools
The DD can be interpreted as a causal effect of the program if in the absence of the program, the increase in educational attainment would have been the same for low and high regions.
Control experiment

• Duflo checked that the assumption was not rejected in the available data
• Suppose we fill the same boxes, but compare the “OLD” to the “VERY OLD”
• Neither of them benefited from the program
  – What do we expect to see if the assumption is satisfied?
  – What do we expect to see if the assumption is not satisfied?
These are simple comparisons of mean

- One can add a lot of covariates and generalize this logic to a regression
• Do the same for wage: Get the same patterns
Our take: 1

• Supply side programs can work
• Nothing would work in some places
• A number of the countries that expanded education the most had either civil wars or mad dictators: Angola, Madagascar, Mozambique, Sudan, Senegal, Zambia
• There is nothing that would have worked in those countries
• Take a policy that supposedly promotes “incentives”: Trade liberalization.
  – Rodrik lists Haiti and Sierra Leone among the countries that liberalized their trade the most.
  – Their growth performance was dismal
• The only useful thing you can do in these countries is help them return to political normalcy
Our take: 2

• Quality education is getting harder and harder to deliver
  – Rising price of teachers
  – Falling returns to primary education

• The need for innovative solutions