

# **Evaluating the impact of scholarships in Cambodia**

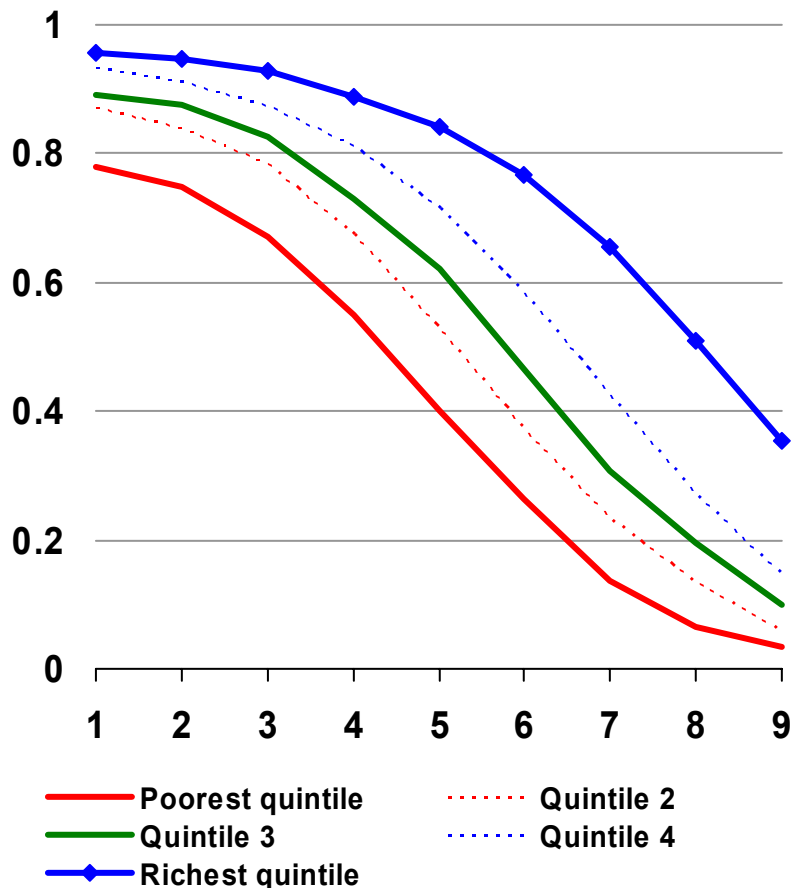
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The World Bank  
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# Context

- Grade attainment of youth 15-19



- Variety of scholarship programs *at the lower secondary level*
  - Government, Donor, NGO
- World Bank was considering supporting a scholarship program

# How did the evaluation come about?

- Preparation of scholarship component of World Bank project
  - First step:
    - Assess status/effectiveness of existing programs
    - Evaluate the impact of a previous program: the Japan Fund for Poverty Reduction (JFPR) Scholarship Program
    - No ex-ante evaluation design ... hard to establish *counterfactual* but nevertheless used **retrospective methods**

# Basic features of retrospective JFPR program evaluation

- Control for observed differences between recipients and non-recipients (OLS; matching)
  - Try to account for selection effects using instrumental variables
  - Showed large **positive effects on enrollment**, particularly among the poorest
- But interpretation of causality (“impact”) was subject to the strong assumption that there are no unobserved differences between recipients and non-recipients (after controlling for observed differences)

# Development of Cambodia Education Sector Support Project (CESSP) Scholarship Program

- Build on existing (Government and NGO) models
- Emphasis on **learning** from the CESSP experience with an eye to the development of a future integrated **National Scholarship Program**

# Goals of evaluation

- Establish the overall impact of the program on **school attendance** and **retention** - and explore heterogeneity of impact
  - Explore the appropriate **amount** for the scholarship
  - Explore the impact on **other dimensions**, not just those foreseen by the program
- Note that these also address **“global” questions** about CCTs
- In addition to issue of the applicability/effectiveness of CCTs in low-income countries

# Evaluation methodology

- Extensive discussions
- **Randomization rejected** as an approach to evaluation—needed to find an **alternative approach**
- Used program structure to evaluate impact

# Structure of CESSP scholarship program

- Selected 100 lower secondary schools
- All Grade 6 students from primary feeder schools fill out application form
- Applications forms are “scored” to generate a dropout risk for each applicant
- At the level of each secondary school, applicants with
  - the highest dropout risk offered \$60 scholarship;
  - somewhat lower dropout risk offered \$45;
  - and others offered no scholarship.

# Data sources

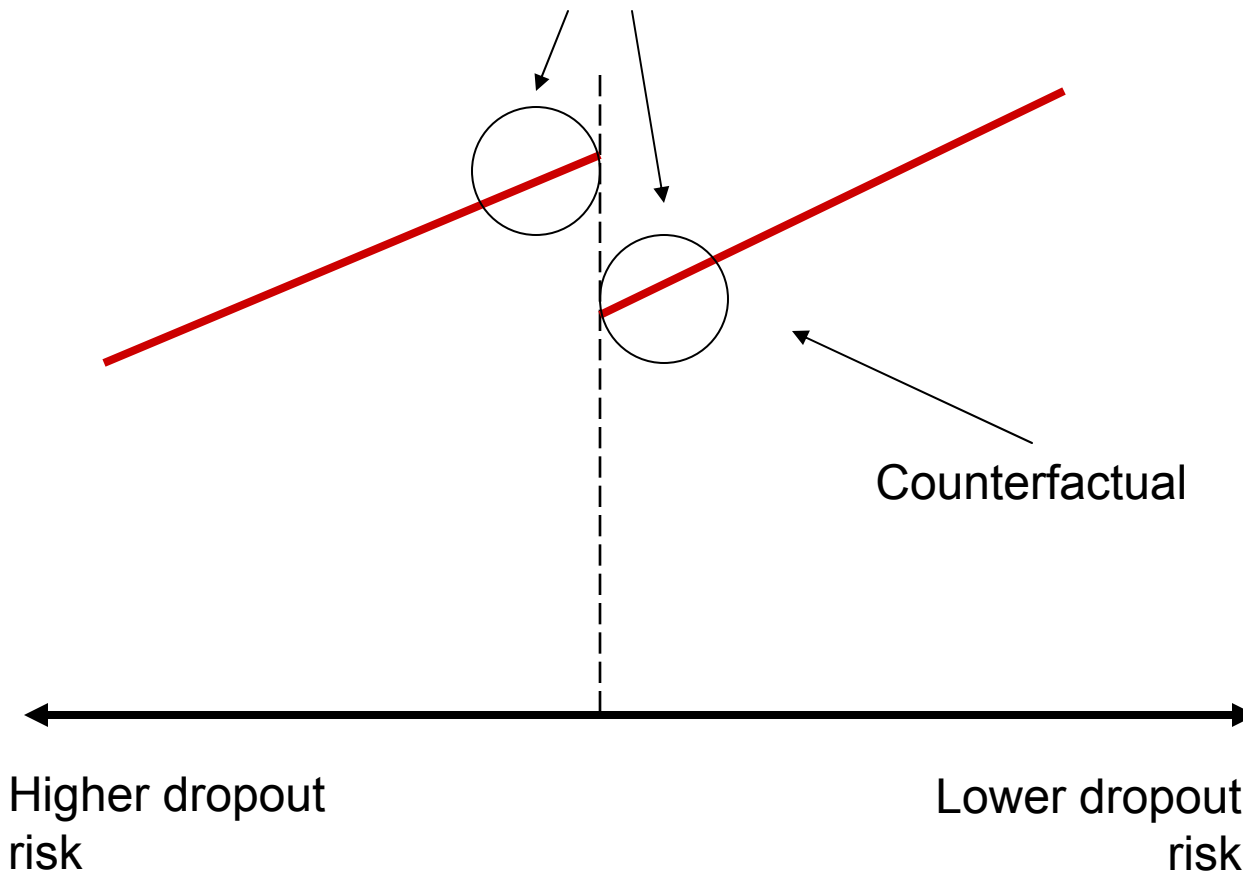
- 26,537 Application forms
  - May 2005
- Official list of recipients (henceforth called “recipients” even if drop out and no longer receive payments)
  - November 2005
- Four school monitoring visits to program schools (100 schools+9 eligible alternative schools)
  - February/March 2006
  - April/May 2006
  - June 2006
  - June 2007
- Household survey with extensive household and applicant survey in 5 provinces
  - October/November 2006

# Identification Strategy

- Method used
  - Regression Discontinuity Design (“RDD”)
- Intuition:
  - For each LMC, the applicants “just above” and “just below” the cutoff for the scholarship are virtually identical, except for the fact that one received a scholarship and the other did not.

# Regression discontinuity intuition

Compare applicants “just above” to those “just below threshold



# Estimation model

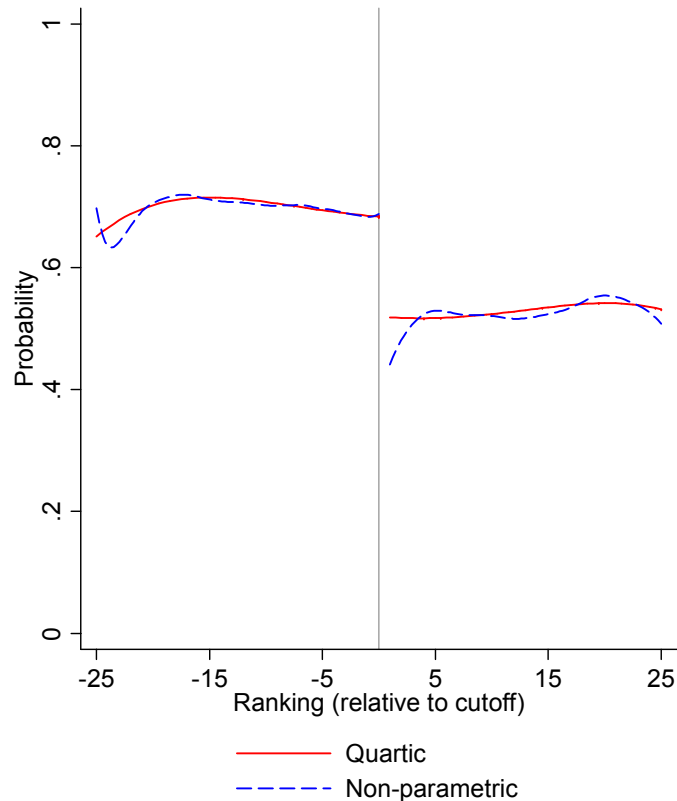
$$Y = \alpha + \beta^*T + f(\text{Score}) + e$$

in practice  $f()$  = quartic (and test sensitivity to alternative functions)

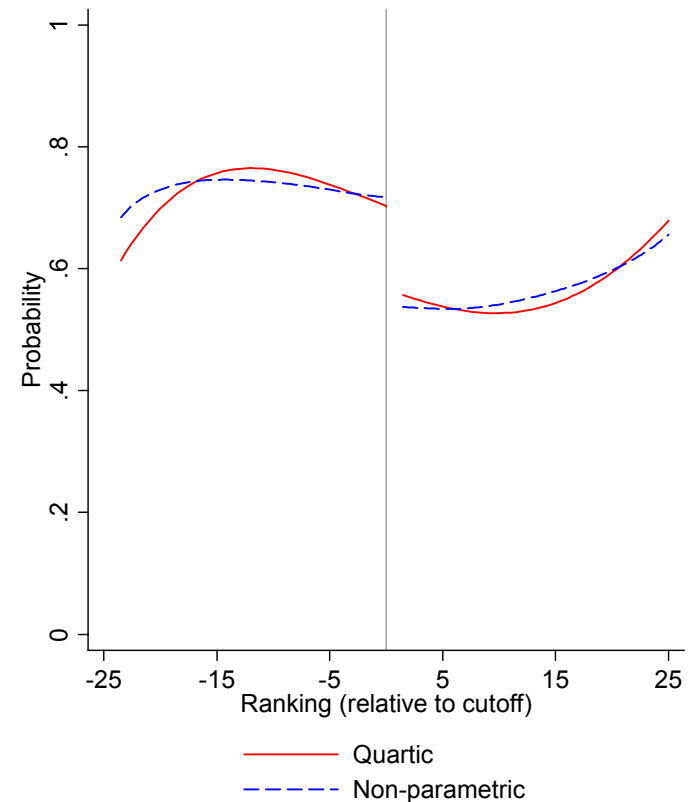
# Results:

## Impact of scholarship receipt (\$45 versus \$0)

- School visits



- Household survey

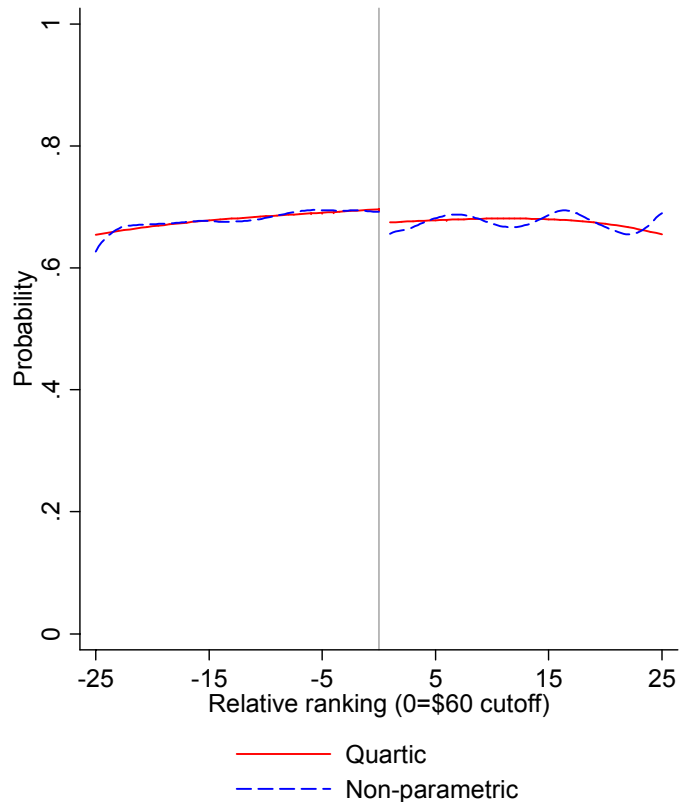


→ Result 1: Large positive impact of program on attendance

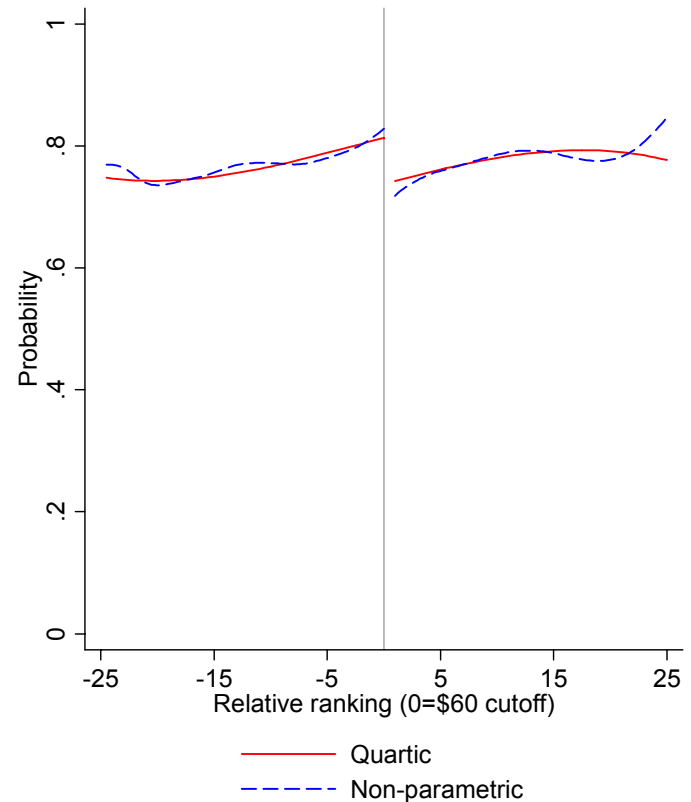
# Results:

Additional impact associated with more money:  
impact of **\$60 over \$45**

- School visits



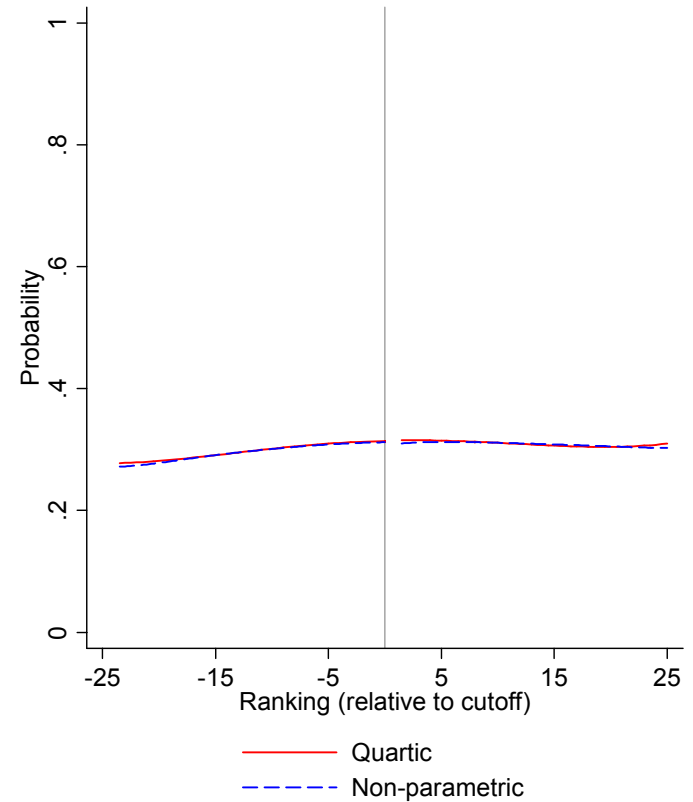
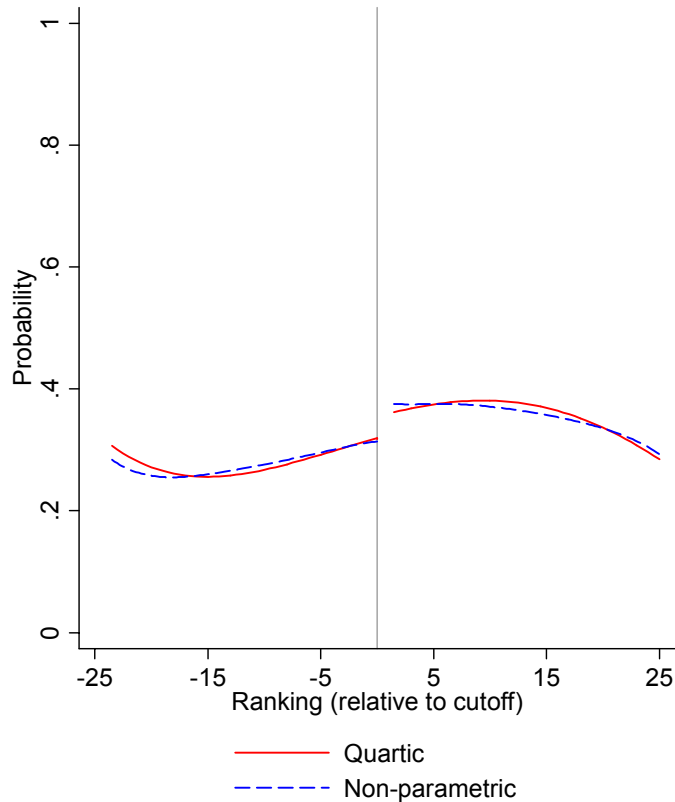
- Household survey



→ **Result 2: First \$45 is much more cost effective**

# Other dimensions of impact ...

- Impact on **work for pay**
- Impact on **sibling enrollment**



→ **Result 3: Impact on labor supply; but relatively small intra-household effects**

# Did scholarships have any impact on learning?

- Data currently being analyzed—but preliminary results suggest:
  - Overall, **schooling is associated with higher test score** achievement (math and vocabulary test).
  - In the raw difference **recipients score worse than non-recipients**.
  - But in the **RD estimates**: Recipients score *no better* than non-recipients despite the boost in attendance

**→Result 4: scholarship students are more likely to attend school but don't perform any better on a test**

- Note:
  - Results similar to those found in Mexico
- Why?
  - Are scholarship programs bringing into school children who are so disadvantaged in other ways that the amount of learning that takes place is limited (after all, these are “**marginal**” students)?
  - Are schools badly set up to teach these marginal children; i.e. is the issue with the **quality of schooling**?

# Notes on evaluation design

- Limitations of RDD
  - Requires **adherence** to “scoring” protocol for straightforward estimation
  - Requires assumption of “**smoothness**” at threshold
  - Evaluates impact “at threshold”
    - Can the results be **generalized**?
    - Limits the extent to which **heterogeneity** can be explored

# Evaluation in Cambodian education

- **Building** on the experience with evaluating lower secondary school scholarships, currently ...
  - Evaluation of pilot scheme to provide **scholarships to upper primary students** in poor and remote provinces
  - Evaluation of alternative models of scaling up **Early Child Development** programs
- Both approaches using **randomized** designs