DO THE POOREST AMONG THE POOR BENEFIT LESS FROM ACTIVE LABOR MARKET PROGRAMS? EVIDENCE FROM PERU’S PROJOVEN

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Motivation

- There is increasing interest in program impact evaluation. These evaluations should play a critical role in policy decision-making ==> evidence-based policy.

- Although theory predicts heterogeneity in impact of training and welfare programs (Bitler at al. 2006), most of the existing literature focuses on mean treatment impacts (Heckman et al. 2001).

- We have scant evidence about heterogeneity in program evaluation, particularly for developing countries (Djebbari & Smith 2005, Dammert 2006).
Our contribution

- We analyze whether the poorest among the poor benefit the same from an active labor market program that targets disadvantaged youths in Peru.

- We use a non-experimental training program, the Youth Training Program PROJOVEN.

- Two analyses:
  - We examine program participation and evaluate whether the poorest self-select themselves out of the program.
  - We estimate heterogeneous treatment impacts both across pre-treatment earnings and across the wealth distribution.
Our contribution

We have five main findings:

- Socioeconomic status is an important determinant of participation: poorer eligible youth tend to drop out.

- We find strong evidence of positive impacts of the PROJOVEN program on participants, particularly for women.

- Quantile treatment effects (QTE) show strong heterogeneity in the impacts of the PROJOVEN program along pre-treatment earnings.

- Both parametric OLS models and semi parametric matching models do not reject the null hypothesis that treatment does not vary with the individuals’ initial poverty level.

- There is evidence of Ashenfelter’s dip in this program.
Organization of this presentation

- The PROJOVEN Program
  - Context
  - Description
  - Participation
- Evaluation data
- Methodological strategy
- Methods and results
- Summary of findings
- Policy discussion
PROJOVEN’s Context

- Peru in the early nineties underwent a vigorous economic recovery.

- Employment growth followed growth in output, but in an inequitable way: the relative earnings of high skilled workers increased.

- In Peru education quality is unequally distributed among youth, being the poorest in considerable disadvantage.

- Given these trends, pertinent training may increase youth income and chances of finding employment.
Youth and Poverty in Urban Peru

Income levels are particularly low for those youth in the poorest quintile, but significant variance is found both within and between the two lowest quintiles.

<table>
<thead>
<tr>
<th>Peru: Income Distribution for Youth in the Two Lowest Income Quintiles</th>
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<tbody>
<tr>
<td>Minimum Monthly Income (US$)</td>
</tr>
<tr>
<td>-------------------------------</td>
</tr>
<tr>
<td>Metropolitan Lima</td>
</tr>
<tr>
<td>Lowest Income Quintile</td>
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<tr>
<td>Second Lowest Income Quintile</td>
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</tbody>
</table>

Source: ENAHO 2004. Elaborated by authors.

This suggests potential for heterogeneous impacts across the distribution of pre-treatment earnings.
The PROJoven Program

- Objective: to improve the productivity and employability of disadvantaged youth.
- The instrument: funding for demand-driven basic training (formal and on-the-job training) in low-skill occupations.
- Operating since 1996; 42,000 beneficiaries.

The Selection of Training Services
- Selection of training institutions.
- Selection of training courses through bidding processes.

The Beneficiary Selection Process

[Diagram showing the selection process with labeled steps: Target Population, Eligible, Program Operator, Orientation, Beneficiaries, Non Beneficiaries, Out of the program, Poor Neighborhood, Training Centers.]
Program Participation

- We exploit a database of eligibles, who are youths interested in the program that went through the registration process. Some of these youngsters then dropped out of the program.

- A probit model was estimated to identify which characteristics are associated with the decision to participate.

**Results:**

- A main determinant of participation is the socioeconomic status of the participant, the poorer tending to drop out.

- Also, dropouts tend to be older, male, and less educated.

- Given the rules of the program, the large proportion of dropouts allow us to rule out cream-skimming on the average.
Evaluation Data

- Evaluation datasets: 10 different sub-samples:
  5 cohorts of beneficiaries (receiving treatment in Lima from 1996 to 2004)
  and 5 comparison group samples.

  - Beneficiary sub-samples: selected from a stratified random sample of
    the population of participants of the 1st, 2nd, 4th, 6th and 8th rounds of the
    program.

  - Comparison sub-samples: selected from a random sample of “nearest-
    neighbor” households.

  - Strategy effective in balancing covariates determining eligibility status,
    but differences in three key variables: marital status, children, and
    unpaid family workers.

- We have panel data collected in 4 rounds: a baseline and 3 follow-up
  surveys taken 6, 12, and 18 months after the program.
Heterogeneous impacts: methodological strategy

- First, we use QTE to identify heterogeneity in treatment impacts along pre-treatment distribution of the outcome (monthly earnings).
- Then we examine whether individual’s wealth status explains the identified heterogeneity.
Heterogeneous Treatment Impacts: Quantile Treatment Effects (QTE)

- This approach is useful to examine how the impact varies at different quantiles of the outcome pre-treatment distribution.

- The quantile treatment effect is defined as:
  \[
  \Delta^{QTE} = y_{1}^{q} - y_{0}^{q}
  \]
  where \( y_{j}^{q} \) denote the \( q^{th} \) quantile of each distribution (1 for beneficiaries and 0 for controls) of the outcome of interest.

- To address the non-experimental nature of our data, we use the inverse propensity score-weighting to obtain the weighted empirical distributions for the outcome of interest (Bitler at al. 2004).
Results from QTE

- We find large and positive treatment impacts for earnings in all public calls and periods of time.

- The estimates depict large degree of treatment heterogeneity:
  - For the first 30 quantiles of pre-treatment earnings: identically zero treatment effects.
  - For 40 and 70 quantiles: highest treatment impacts.
  - For quantiles 80 to 90: the treatment group earnings exceed the comparison group earnings but they eventually become smaller.

- No evidence that treatment heterogeneity decreases (increases) over time.
Does individual’s wealth status explain treatment heterogeneity?

- No household income or expenditure data: need to rely on a wealth index (Filmer and Pritchett 2001; Gwatkin et al. 2000; Stecklov et al. 1999; *inter alia*).

- Based on household asset information using the principal components procedure to determine weights for asset variables.

- Through empirical validation it was established the robustness and consistency of the index.

- The difference in the mean wealth index between the “poorest”, “poor” and “less poor” individuals is considerable, so the method allows to sort individuals into different wealth percentiles of the population.
Heterogeneous Treatment Impacts Across Wealth Status – Parametric Estimates

- Semi difference-in-differences model (LaLonde 1986) (consistent with pre-program earnings dip)

\[ y_{it} = \delta_0 + \delta_1 W_{4i} + \delta_2 W_{2i} + \beta_0 T_i + \beta_1 T_i^* W_{4i} + \beta_2 T_i^* W_{2i} + \gamma y_{i,t-1} + X_{it}' \alpha + \varepsilon_{it} \]

- Interaction terms are expected to be positive if individuals from “less poor” households (W4 and W2) benefit more from the program than individuals living in the “poorest” households (W1).
- The X-vector includes household and individual characteristics.

- Null hypothesis of homogeneous impacts along the wealth index:
  \[ H_0 : \beta_1 = \beta_2 = 0 \]
Heterogeneous Treatment Impacts Across Wealth Status – Parametric Estimates

- We do not reject the null hypothesis that treatment does not vary with the individuals’ initial poverty level for all public calls and for short- and medium-term. Also for males and females separately.

- Strong positive impacts on the monthly earnings of beneficiaries are found, though they decrease somewhat over time.

- On the contrary, the average impacts on the employment variable are small and even negative for some calls.

- The earnings and employment treatment estimates are larger for females rather than males.

- The “poorest” males and the “less poor” females benefit more from the program.
Heterogeneous Treatment Impacts Across Wealth Status – Matching Estimates

- We implement two propensity score matching methods:
  - Difference-in-difference
  - Cross-section.

- Propensity score matching allows us to relax any linear assumption that may mask the earnings-wealth relationship.

- Also, it forces to compare comparable individuals via a common support condition.

- The counterfactual outcome for each treatment unit is computed using a weighted average of the comparison units’ outcomes over the common support region, and then averaging these results over the treatment group sample.
Heterogeneous Treatment Impacts Across Wealth Status – Matching Estimates

- We do not reject the null hypothesis that treatment does not vary with the individuals’ initial poverty level.
- Earnings and employment effects are positive for most public calls, being the second one small relative to the first one.
- The cross-section matching estimates are lower than the difference-indifference estimates, which is explained by the existence of Ashenfelter’s dip in the PROJOVEN data.
- In almost all public calls the point estimates also indicate a downward trend in the evolution of the earning gains over time.
- The qualitative conclusions for males and females separately are similar to those emerging from the OLS Estimation.
Summary of findings

- The poorer eligible youth tend to drop out, which suggests exclusion through self-selection out of the program. The large proportion of dropouts allow us to rule out cream-skimming by training institutions on the average.

- The quantile treatment effects (QTE) show strong heterogeneous impacts in the PROJOVEN program.

- The constructed wealth index allows to sort individuals into different wealth percentiles of the population.

- Both parametric OLS models and semi parametric matching models do not reject the null hypothesis that treatment does not vary with the individuals’ initial poverty level (for all public calls and for short and medium term).

- Impacts on earnings are relatively higher than on employment status for most public calls and both decrease over time. Both are larger for females rather than males.
Policy discussion

- PROJOVEN is part of a “generation” of training programs implemented in Latin America in the nineties in the midst of structural reform. Thus, the relevance of findings exceed the evaluation of the Peruvian case.

- Several of the findings are of interest to policy makers.

- Participation by the poorer is an issue. Thus, identification of factors that prevent the poorer from participating would be an important step towards incorporating them.

- PROJOVEN’s market-based design is effective at:
  - enhancing employability of participating poor youth
  - equity enhancing among participants, since evidence indicates similar returns along varying wealth (poverty) levels.
  - reducing labor market gender gaps.
Policy discussion

- The program is more effective at improving earnings of participants rather than changing their employment status. Hence it may be a good idea to incorporate a training module oriented specifically to this goal.

- The estimates of treatment impacts over time should be compared to the program’s cost to have a reliable cost-benefit analysis.