Workfare programs and their delivery system:
Effectiveness of Construyendo Perú

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Motivation

- Public works have been increasingly implemented in developing economies
  - Peru is a case in point in LAC (19% of all ALMPs, highest share)
  - Usually in the form of workfare programs

- Knowledge from advanced countries cannot necessarily be extrapolated
  - High incidence of informality
  - Inadequate administrative and institutional capacity to implement policies effectively

- Evidence, particularly in LAC, is in its nascent phase and suffers from important gaps
  - Effects post-participation are limited (Jalan and Ravallion, 2003; Ronconi et al., 2006; Hermani-Limarino, 2011)
  - Even less is known regarding the effects on job quality
Contribution of the paper

- It measures medium- to long-term effects
  - Effects are measured in 2012
  - Of programme participation during the period 2007–10

- It provides impacts on several labour market variables
  - On labour market status and type of occupation
  - But also on job quality: informality, working time and working poverty

- It exploits the heterogeneity of effects on different groups
  - By sex and level of education

- It aims to identify the mechanisms driving the observed effects
Key findings

- **Positive effects on employment and labour participation**
  - Only for some groups: women and the lower-educated
  - And not highly significant

- **Not so positive effects on work quality**
  - Increased participants’ probability of working informally and of being working poor
  - These effects are highly significant

- **Mechanisms**
  - Radical move from infrastructure- to service-sector projects
  - Change in the nature of the projects selected to implement the program exacerbated the effects
  - Resources were not allocated efficiently
Background

**A Trabajar urbano**
Active from December 2001 to May 2007

**Construyendo Perú**
Active from June 2007 to July 2011

**Trabaja Perú**
Active from August 2011
The program *Construyendo Perú*

- **Objectives:**
  - Providing temporary employment to the unemployed living in poverty and extreme poverty
  - Improving their employability

- **Implementation:**
  - Financing of public investment projects intensive in the use of unskilled labour
  - Public works for a maximum of 4 months

- **Services provided to participants:**
  - Temporary employment (685,000 short-term jobs)
  - Two types of training (provided only in 2007 and 2008)
  - Soft-skills training (mandatory but not enforced); technical training (voluntary)
Targeting stages

- **Geographical (district level):**
  - Urban population greater than 2,500 inhabitants
  - Ranking of districts according to composite index FAD (*factor de asignación distrital*)
  - The higher the index the greater the budget assigned to the district

- **Selection of public projects to implement the program**

- **Individual targeting (individual level):**
  - Individual characteristics
  - Socio-economic situation (through SISFOH)
  - Public draw among eligible applicants
Data and estimation strategy

Data:
1. District level database
   - Constructed for this analysis using census data, poverty maps and administrative data of the program
2. Special survey: Carried out in March 2012 to programme participants
   - No consolidated version (modules come separately for each year)

Identification:
- Fuzzy RDD given programme assignment
- The running variable is the FAD composite index (reconstructed)

Empirical specification:
- A parametric 2SLS (two-stage least squares)
- A nonparametric LLR (local linear regression) with 3 bandwidths
Empirical approach: Validity of other key assumptions

- **Continuity of the FAD index around the cutoff:**
  - Geographical distribution of districts
  - Smoothness of districts’ baseline characteristics around the discontinuity
  - Smoothness of individuals’ baseline characteristics around the discontinuity

- **Agents cannot manipulate assignment:**
  - FAD index (variables predate the program)
  - Cut-off point (based on available funds)
Since RDD is a local estimator, the effect needs to be examined in the neighbourhood of the discontinuity
Graphical effects: Probability of working informally

Figure: Mean probability of working informally conditional to the FAD index
## Estimated effects: Labour market status and work quality

<table>
<thead>
<tr>
<th>Status</th>
<th>Method</th>
<th>All</th>
<th>Women</th>
<th>Lower educated</th>
<th>Higher educated</th>
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<td>4.7*</td>
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<td>-2.8*</td>
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<td>6.6**</td>
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<td>15.2***</td>
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<td>8.9***</td>
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<td>15.6</td>
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**Interpretation**

**Sensitivity analysis**

Verónica Escudero  
*Construyendo Perú*  
May 11, 2018  
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Mechanisms driving the effects

- Radical move from infrastructure- to service-sector projects between 2007–08 and 2009–10:
  - Budget fell, yet number of projects and temporary jobs did not

- This move had consequences on the nature of the projects executed:
  - 2007–08: Generous budget, public infrastructure projects, longer duration of projects and jobs, provision of training.
  - 2009–10: Reduced budget, service-sector related projects, shorter duration, training was abandoned.

- Effects were exacerbated during the latter period:
  - Participants in 2009–10 (with respect to 2007–08):
    - Higher probability to work informally, as own-account workers and to be working poor
    - Lower probability to work as waged employees
Exploring explanations for change in effectiveness between periods:

- No evidence of "frontier effects"
- The labour market was not affected by the global crisis in 2009–10
- A change in the nature of investment projects between the two periods is the most plausible driver of results

Were resources allocated to the most efficient of those projects?

- Estimation using program investment per participant (by department) as measure of participation
- Resources do not seem to be financing the most efficient projects either
Conclusions

- In a nutshell, *Construyendo Perú*:
  - (+) employment and (−) inactivity for particular groups
  - But at the cost of locking participants in lower quality jobs
  - Participants are more likely to work informally and be working poor

- Alongside these effects:
  - (+) probability of being own-account worker
  - (+) probability of being waged worker
  - (−) probability of being waged employee

- What is driving these effects?
  - Radical move from infrastructure- to service-sector projects
  - Effects worsened in 2009–10 due to the change in characteristics of the projects executed
  - Program resources did not always fund the most efficient projects
Thank you

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Annex 1: Literature

- Workfare programs can have an antipoverty effect (Subbarao, 1997)
  - Direct transfers during participation
  - Provided wages outweigh costs of participation

- Stabilization and consumption smoothing effects (O’Keefe, 2005)
  - Safety nets during crises
  - Protect individuals from unfavourable decisions even if wages are low

- In the longer term, however, effects depend on their employability effects
  - If not possible detrimental effects on employment (Hujer, 2004)
  - Positive effects on poverty if large enough to affect private sector wages (Dev, 1996)
Annex 2: Beneficiaries of Construyendo Perú”

Figure: Total number of short-term jobs created per year

Source: MTPE administrative data

- Received also specific training
- Did not receive training or attended general training sporadically
Annex 4: Discontinuity at the district level

Figure: Mean probability of district participation conditional to the FAD index (Cut-off point at FAD=0.125)
Figure: Mean probability of individuals participating in the program conditional to the FAD index (Cut-off point at FAD=0.125)
Annex 6: Identification strategy

\[
\lim_{\delta \to 0} \frac{E[Y_i \mid x_0 < x_i < x_0 + \delta] - E[Y_i \mid x_0 - \delta < x_i < x_0]}{E[D_i \mid x_0 < x_i < x_0 + \delta] - E[D_i \mid x_0 - \delta < x_i < x_0]} = \rho
\]  

- **The causal effect of treatment will be determined by dividing:**
  - the jump in the outcome-rating relationship
  - by the jump in the relationship between treatment status and rating

- **This will provide:**
  - an unbiased estimate of the LATE
  - Wald estimand for fuzzy RD captures the causal effect on compliers
Annex 7: Smoothness of districts’ characteristics

**Figure:** Unemployment rate & Share of people working in micro firms

Continuity assumption
Figure: Working poverty & self-employment
Annex 9: Interpretation

- Clearer effects on women – higher participation

- Limited effects on employment of the overall group
  - Labour market effects might have faded away
  - There is simply deadweight loss

- Detrimental effects on job quality (e.g. informality, working poverty)
  - Higher skilled – self selection into the technical training, seems to be promoting self-employment
  - Women – inability of the program to raise employability might be perpetuating unstable labour market patters.

- Lack of effects on working time
  - Individuals working formally work longer hours in Peru (50 h/week compared to 45 h/week)
  - Employers report the highest number of hours worked (53 h/week)

- Limited employability – Mostly an income support programme
Annex 10: Tests and sensitivity analysis

- Validity of underlying assumptions:
  - Continuity assumption and exclusion restriction
  - The running variable has not been influenced by treatment
  - The cut-off point has been determined independently

- Other threats to validity verified:
  - Agents cannot manipulate the running variable
  - Cut-off is set independently of running variable
  - No other discontinuity affecting results

- Falsification tests:
  - Individuals living in rural districts;
  - Individuals with higher level education;
  - Individuals in the highest income decile

- Evidence of a latent variable driving results?
  - Differences in district characteristics related to FAD, which did not change during the duration of the programme
  - Changes in the budget and institutional factors unlikely to have biased district participation
Annex 11: Construyendo Perú’s budget, projects and jobs

Figure: Budget, jobs created and projects executed per year

Source: MTPE (2007–2011)
## Annex 12: Estimated effects by period and type of project

<table>
<thead>
<tr>
<th></th>
<th>Baseline</th>
<th>Investment per participant</th>
<th>2007-2008</th>
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<th>Service-sector projects</th>
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<td>-4.4*</td>
<td>-6.0**</td>
<td>-3.8*</td>
<td>-4.3*</td>
</tr>
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<td>(1.4)</td>
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<td>(4.9)</td>
<td>(5.4)</td>
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<td>(4.9)</td>
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<tr>
<td>Working poor</td>
<td>7.6***</td>
<td>9.3***</td>
<td>12.2**</td>
<td>18.7***</td>
<td>9.9***</td>
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<tr>
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<td>(2.7)</td>
<td>(3.6)</td>
<td>(5.7)</td>
<td>(5.6)</td>
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<td>ns</td>
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</tbody>
</table>
### Annex 13: Estimated effects for women

|                          | Overall Women |          |          |          |          |          |
|--------------------------|---------------|----------|----------|----------|----------|----------|----------|
|                          | Baseline      | Inv. per participant | 2007-2008 | 2009-2010 | Baseline | Inv. per participant | 2007-2008 | 2009-2010 |
| Employed                 | ns            | ns       | ns       | ns       | 2.3*     | 2.7*     | ns       | 5.1*(1.2) | (1.5)     | (2.6)     |
| Inactive                 | ns            | ns       | ns       | ns       | -2.5*    | -2.9*    | ns       | 5.3*(1.4) | (1.7)     | (2.9)     |
| Own-account worker       | 3.6** (1.5)   | 4.3** (1.9) | 6.1** (3.0) | 8.3** (3.2) | 2.8*** (1.0) | 3.4** (1.3) | 5.0** (2.4) | 6.2*** (1.8) |
| Waged worker             | ns            | ns       | ns       | ns       | ns       | ns       | ns       | ns       | ns        |
| Waged employee           | -2.8* (1.4)   | -3.4* (1.7) | -4.4* (2.6) | -6.0* (3.0) | -1.6* (0.8) | -1.9* (0.9) | ns       | -3.2* (1.7) |
| Informal                 | 5.5** (2.4)   | 6.7** (3.1) | 9.3* (4.9) | 12.7** (5.4) | 4.0** (1.9) | 4.8** (2.3) | 7.1* (3.9) | 8.7** (3.9) |
| Working poor             | 7.6*** (2.7)  | 9.3*** (3.6) | 12.2** (5.7) | 18.7*** (5.6) | 5.6*** (1.9) | 6.8*** (2.5) | 9.4* (4.4) | 13.2*** (3.8) |
| Excessive hours          | ns            | ns       | ns       | ns       | ns       | ns       | ns       | ns        | ns        |

Results overall population