The Impact of *Bolsa Família* on Education and Health Outcomes in Brazil

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Overview

- *Bolsa Família* is the largest CCT program in the world
  - 12.7 million beneficiary households (>49 mn individuals) in 2010
  - US $5 billion annual budget

- Monthly per-child payments to poor households, conditioned on a series of education and health requirements

- IFPRI evaluated the impact of *Bolsa Família* on education and health outcomes using survey data from 2005 and 2009
  - Education: attendance, grade progression, child labor
  - Health: women’s prenatal care visits, rates of timely vaccination

- Other evidence on *Bolsa Família*
  - Glewwe and Kassouf (2010): using spatial variation in the roll-out of BF and school census data, BF increased enrollment rates by 5-7 percentage points and had small effects (<1ppt) on dropout rates and grade promotion
Brazil’s *Bolsa Família* Program

- **Transfers**: R$15 (now R$22) per child or pregnant/breastfeeding mother per month to eligible families, up to maximum of R$95/month (now R$200/month or US$95)

- **Conditionalities**: school attendance rate of at least 85% for children age 7-15; vaccinations for children age 0-6 years; prenatal care visits required for pregnant women

- **Eligibility**
  - families with monthly per capita income below R$120 ($57)
  - households “likely to be eligible” were registered in national registry (*Cadastro Unico*)
  - *BF* beneficiaries selected from *Cadastro* based on: municipality-level quotas set using poverty maps, household income, demographics
Design of the Impact Evaluation

- IFPRI undertook evaluation in 2009-10
  - First round of evaluation household survey (AIBF-1) had been collected in 2005 (CEDEPLAR) during phased roll-out of BF
  - IFPRI/Datametrica conducted follow-up panel survey in 2009 (AIBF-2)

- 2005 Survey Round (AIBF-1)
  - sample included current BF beneficiaries and nonbeneficiaries registered in the Cadastro Unico
  - poor areas and urban areas oversampled in 2005: applied sample weights

- Significant sample attrition (25.7%) due in part to highly urban sample
  - 2005: 15,426 households; 2009: 11,433 households
  - attrition was non-random, so applied attrition weights
Identification and Empirical Strategy

- Propensity score weighted regression (Hirano, Imbens, and Ridder, 2003):
  - assumes assignment to treatment is unconfounded: independent of outcomes given observables
  - analysis controlled for large set of 2005 household and municipality characteristics

- Identification takes advantage of municipality-specific rules for BF eligibility
  - comparison households may be similar to neighboring BF recipients
  - all comparison households registered in Cadastro Unico – reduces bias

- Two approaches to constructing treatment/comparison groups
  - **Treatment (1):** Nonrecipient in 2005, Recipient in 2009 (n=2,828)
  - **Treatment (2):** Nonrecipient or recipient in 2005, Recipient in 2009 (n=4,523)
  - **Comparison:** Nonrecipient in 2005, Nonrecipient in 2009, Registered in Cadastro Unico (n=2,586)
Potential for Impact on School Attendance:
Little room for impact at age 7-12; more potential at ages 13-17
In the Northeast, children in Bolsa Família households are much more likely to attend school.
The impact of Bolsa Família on schooling: Three key findings

- Bolsa Família increased school attendance
  
  | All children, age 6-17 | 3.7 – 4.4 percentage points (ppt) |
  | Females, age 15-17     | 9.2 ppt                          |
  | Rural areas, age 15-17 | 9.3 ppt                          |
  | Northeast, age 6-17    | 11.7 ppt                         |

- Bolsa Família increased rates of grade progression by 6.0 percentage points

- Bolsa Família has large effects on keeping children in school after age 14
  - A 15 year old girl is 21 percentage points more likely to attend school if her family receives Bolsa Família
  - Bolsa Família increased boys’ age of entry into the labor market by 1.5 years on average
The impact of Bolsa Família on health care and nutrition: Three key findings

- **Prenatal care:** Bolsa Família increased pregnant mothers’ use of prenatal care by 1.5 prenatal care visits on average.

- **Nutritional status:** Bolsa Família had no impact on mean HAZ, WAZ, stunting prevalence or wasting. However, Bolsa increased mean BMI-for-age z-scores by 0.4 standard deviations.

- **Vaccinations:** Bolsa Família increased the probability that a child receives all seven vaccines required by age 6 months by 12-15 percentage points. However, on-time vaccination rates remain low in Bolsa and non-Bolsa households.
Reflections

- Long process of contracting the IE
  - Challenges of panel survey when having long gaps between rounds
    - Attrition;
    - Study population is no longer representative of the real treatment universe (studying a dying star)

- Changing the firm responsible for field work and analysis between the two rounds of a panel survey can be problematic:
  - cannot exploit lessons learned and know-how from the first round;
  - process of integration of the two databases can be very time-consuming.
Reflections

- Secrecy of location of the sample (designed to prevent the PBF program from manipulating the evaluation results) makes it harder for the program to supervise and quality control the evaluation.

- Brazil’s heterogeneous context (alternative benefits, conditionalities, and interventions across municipalities) creates many opportunities for experimentation and evaluation that are not fully exploited.