Overview of Household-Level Analysis

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Objective

- To provide an overview of the approaches taken by the *From Protection to Production Project* to evaluate the productive impact of cash transfers on household behavior
  - Approach includes both the methods used for data collection as well as the framework for analyzing the data

Conceptual framework (*Theory of change*)

- Household model with market failures/imperfections
  - Household behavior in the presence of credit and insurance market failures (nonseparable production and consumption)
    - Livelihood, crop, variety diversification
    - Labor allocation and investment
    - Resource allocation and investment
    - Input use and spending
    - Social network interaction
  - Change in behavior with the diffusion of cash
    - Assumes market failure/imperfections
    - Alteration of above decisions

→ Productive impacts

Theory → Research/Policy questions

- Overall impacts on productive outcomes (what?)
  - Yields, production, revenue, wage income, etc.
- Mechanisms of impact (how?)
  - Labor use, input use, investment, etc.
  - but also, productivity, efficiency, etc.
- Heterogeneity of impact (who?)
  - Country context, local context, household characteristics, etc.
- Indirect impacts (who else?)
  - Externalities, general equilibrium, behavioral… spillover effects
  - Ineligible in village, outside village…

Overall approach

- Conceptual framework and research/policy questions drive the overall approach used to assess household level impacts
  - Questionnaire
  - Sample design and impact evaluation strategy
  - Analytical framework
- Country context also determines the specific approach taken
  - Program type, targeting and implementation
  - Political and practical considerations

Underlying principles

- Questionnaires with appropriate data collection for *PtoP*
  - Agriculture, non-agriculture self employment, labor use, land use, asset ownership…
  - Indicators and data for analysis
- Program evaluation and the need for a counterfactual driving sample design
  - Data Methods
- Consideration of heterogeneity of impact in sample design
- Consideration of indirect/spillover effects in sample design
  - Contamination
  - Measurement

Data ⟺ Methods

- Data collection
  - Randomization (RCT)
  - Discontinuity design
  - Encouragement design
  - Synthetic controls
- Methods
  - Cross sectional analysis
  - Difference-in-difference
  - Propensity score matching
  - Inverse propensity weights
  - Fixed effects

Reality of data collection

- Randomization is ideal but rarely perfect
  - Community/village level randomization
    - Practicality
    - Spillovers
  - Small number of communities/villages
    - Pilot programs
  - Implementation of program
    - Targeting especially decentralized targeting

- Most evaluations requires using a range of methods
  - Challenge in determining what is best since depends on collected data

From Protection to Production designs

	IE design	Replicate targeting	clusters	treat	control	non eligible	waves
Kenya CT-OVC	RCT	simulated	28	1280	531	0	3
Lesotho CGP	RCT	perfect mimicking	96	766	765	1571	2
Malawi SCT	RCT	perfect mimicking	40	1750	1750	0	2
Ghana LEAP	Synth. controls	national surv.+ PSM	7	700	800	0	2
Ethiopia SPP	Synth. controls	taken from same tabias	2	1702	1703	470	3
Zambia Ch. Grant	RCT	perfect mimicking	90	1228	1287	0	3
Zimbabwe SCT	Synth. controls	perfect mimicking	90	1500	1500	900	3

Zambia

- Child Grant Program
  - Geographic targeting of poor districts (Kalabo, Kaputo, Shongombo)
  - Families with children under 5 eligible
  - Transfers of $11 per month
- Randomized phase in
  - Baseline survey: Sept-Oct 2010 (before random assignment)
  - Communities randomly assigned to treatment and control
    - Treatment gets program in Dec 2010 and control Dec 2013
  - 1228 treatment and 1287 control households (2515 total)
  - Follow-up surveys: 2012 and 2013

Ghana

- LEAP (Livelihood Empowerment Against Poverty) Program
  - Geographic targeting of poor districts (in 10 regions) based on poverty map
  - Communities chosen based on DSW's local knowledge of relative deprivation
  - Transfers plus health insurance via national system
  - Transfers vary by households size: $15-27 for 1-4 members
- Synthetic controls
  - Nationally-representative household survey 2010
  - 700 treatment households randomly included in survey prior to knowledge of LEAP—implemented with national survey
  - Control households drawn from national survey using PSM

Challenges in the analysis

- Establishing a counterfactual
  - Approaches given the data collected
    - Not what was planned but what was implemented
    - Need for understanding of program implementation
- Answering the right questions
  - Methods
    - What is appropriate?
    - DD, PSM, IPW, Fixed effects…
  - Rule #7: Understand the Costs and Benefits of Data Mining

    Kennedy,, P. (2002) “Sinning in the Basement: What are the Rules? The Ten Commandments of Applied Econometrics” *Journal of Economic Surveys* 16(4): 569-589.

Challenges in the analysis (cont')

- Analyzing mechanisms and heterogeneity of impact
  - Consistency in approach and the counterfactual
    - Maintain or alter the manner in which a counterfactual is created
  - Household versus individual level indicators
    - Level at which to conduct an analysis
    - How to keep consistency yet explore data?

→ Is there a "right" approach?

Kennedy (2002): Ten Commandments

1. Thou shalt use common sense and economic theory
2. Thou shalt ask the right questions
3. Thou shalt know the context
4. Thou shalt inspect the data
5. Thou shalt not worship complexity
6. Thou shalt look long and hard at thy results
7. Thou shalt beware the costs of data mining
8. Thou shalt be willing to compromise
9. Thou shalt not confuse significance with substance
10. Thou shalt confess is the presence of sensitivity

Moving forward

- Expanding heterogeneity of impact
  - Greater consideration of if and why impacts vary
  - Evaluation issues: Consistency and sample
- Structural models versus impact indicators
  - Production functions, damage abatement functions, efficiency
  - Data issues: Availability
  - Evaluation issues: Structural models and a counterfactual
    - IPW
- Meta-analysis/systematic review
  - Bringing together evidence from PtoP and comparable studies
  - Timing

Additional comments?

- Are there other challenges in conducting household level analysis?

- Are there additional types of analysis that should be done as we move forward?