Measuring the impact of cash transfer programs on the local rural economy: combining household survey data with a business enterprise survey

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A new research agenda on cash transfers programs

• Massive expansion of cash transfer programs in Sub Saharan Africa to poor and vulnerable households
• Beyond impacts on human development, cash transfers can foster broader economic development, including agriculture
  – Through changes in household behavior (labor allocation and investment in productive activities) and through impacts on the local economy
• Bulk of beneficiaries of these programs live in rural areas, and most are engaged in agriculture.
• Yet most cash transfer impact evaluation surveys collect little information on household agricultural activities
And there are a lot of new rigorous cash transfer impact evaluations

- Malawi SCT
  - Mchinji pilot, 2007-2009
  - Expansion, 2011-2013
- Kenya CT-OVC
  - Pilot 2007-2011
  - Expansion, 2011-2013
- Mozambique PSA
  - Expansion, 2008-2009
- Zambia
  - Kalombo pilot, 2005
  - Monze pilot, 2007-2010
  - Expansion and child grant, 2010-2013
- South Africa CSG
  - Retrospective and expansion, 2010-2013
- Ethiopia
  - PNSP, 2006-2010
  - Regional minimum social protection package, 2011-2013
- Ghana LEAP
  - Pilot, 2010-2012
- Lesotho CGP
  - Pilot, 2011-2012
- Tanzania, TASAF
  - Pilot, 2010-2011
- Uganda, begins in 2011
- Zimbabwe, begins in 2012
- Niger, begins in 2012
Why should we care?

• Contribution to policy debate
  – Understand overall contribution of CT programs to poverty reduction (cost-effectiveness) in rural areas
  – Political economy: more support for CT programs
  – Promote inclusion as part of rural and agricultural development strategy
    – Link agriculture to social protection

• Contribution to program design
  – Most programs not designed with productive dimension or agriculture in mind
    • Evidence on how households spend, invest, or save can help strengthen design and implementation
    • Confront potential synergies and constraints (eg, child labor)
  – Link to graduation strategies, “productive insertion of beneficiaries” or welfare-to-work transitions
From Protection to Production project

• FAO–UNICEF ESARO project focusing on understanding the economic impacts of cash transfer programs
  – Providing technical and analytical assistance to government agencies carrying out impact evaluations
  – Financing marginal cost of collecting additional information
  – Formally working with 6 countries in Sub Saharan Africa
    • Lesotho, Malawi, Ethiopia, Zimbabwe, Kenya and Ghana
    • Though we provide support to any government administered CT who requests it
Partnerships

Guiding principle:
piggy-back on/add value to existing impact evaluations

• Component of overarching “Transfer Project”
  – UNICEF, Save the Children UK, University of North Carolina

• Strong partnership with Government and UNICEF country offices currently implementing impact evaluations
  – Plus DFID and World Bank country teams

• Collaboration with independent external evaluators (international firms and national research institutions)
  – Regional partners
Strengthening data collection and analysis in ongoing impact evaluations

- Analysis of household decision making
- Simulation of local economy impacts
- Integration of qualitative/quantitative design and methods
- Increase capacity of program managers and policy-makers
Analysis of household decision making

• Design, pilot and supervise implementation of additional modules in household surveys
• Analysis of decisions regarding
  – Asset accumulation, productive activities and labor allocation
  – Climate change adaptation
  – Risk coping strategies and risk management
  – Extent of reciprocal exchange
• FAO team will lead data analysis
Household level analysis: evaluation framework

- Experimental design with random allocation of treatment and control groups, pre and post treatment panel surveys
- Difference and difference estimator
  \[ Y_i = \beta_0 + \beta_1 I_i + \beta_2 t + \beta_3 (t \times I_i) \]
- Adding control variables or PSM when issues with randomization
Household level analysis: data requirements

• “Standard” modules
  – Labor, crop and livestock production and non farm business activity; asset ownership; credit access and use, etc.

• Social networks
  – Cash/in kind/labor exchanges

• Time use
  – Adults and children

• Attitudes towards risk
  – Hypothetical situations

• Climate change

• Risk coping strategies (pieces of other modules)
Looks straightforward, but....... this is main challenge of project

• Convincing managers to collect additional information in context of overcrowded survey instrument

• Difficulties particularly acute because:
  – Most CT programs located in ministries of social welfare and the like
  – Most government officials and development staff associated with program are from social sectors
  – Most firms contracted to carry out evaluation analysis have scant experience in livelihood dimension of rural households

• Long process of negotiation
  – Force of argument and $$$$$$
Simulation of local economy impacts

• Construct village SAM/CGE models for cash transfer program areas in each country
• Analytical work led by Prof Ed Taylor and team at UC Davis
Local economy analysis: evaluation framework

- Village SAM/CGE model simulates impact of cash transfer on local economy
  - social accounting matrix (SAM)
  - computable general equilibrium (CGE)
  - One or multiple SAMs, linked according to income and expenditure accounts, and nested in CGE model

- SAM captures social and economic structure of village/local economy, including types of households

- CGE Parameters (Cobb-Douglas production functions, consumer demand) calculated directly from SAMs or estimated from household survey data
• SAM/CGE simulations provide
  – Insights as to economic channels/linkages through which a cash transfer operates
  – Indication of multiplier impacts of household level transfer
    • CGE modeling methods allow for flexibility in terms of market functioning—non perfectly functioning markets accentuate multiplier impacts
  – Comparison of alternative program designs
  – Assessment of heterogeneity of impacts, for example, across different market environments
Local economy analysis: data requirements

• Filling the SAM
  – Business production, revenues, costs, input use, hired and household labor, capital
    • Input-output matrix of all transactions in local economy (revenues, consumption, factors of production, etc)
  – To/from whom and where on all cash transactions (business sales and purchases, consumer purchases)

• Two data sources:
  – Business enterprise survey in areas where the program operates
  – Household survey
Local economy analysis: data requirements

<table>
<thead>
<tr>
<th>Incomes</th>
<th>Expenses</th>
<th>1. PRODUCTION</th>
<th>2. FACTORS</th>
<th>3. INSTITUTIONS</th>
<th>4. CAPITAL</th>
<th>5. REST OF WORLD</th>
<th>TOTAL</th>
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</thead>
<tbody>
<tr>
<td>1. ACTIVITIES</td>
<td></td>
<td>(a) Intermediate Inputs (Input-Output Matrix)</td>
<td></td>
<td>(g) Home Consumption</td>
<td>(h) Implicit Investment or Storage</td>
<td>(i) Sales inside and outside ZOI</td>
<td>(e) Total Production Value</td>
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<td>2. FACTORS</td>
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<td>(b) Value-Added from Production</td>
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<td>(c) Wages, rental income</td>
<td>Total Factory Receipts</td>
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<td>3. INSTITUTIONS</td>
<td>(c) Indirect Taxes</td>
<td>(f) Household Value-Added Income</td>
<td>(j) Public and private transfers</td>
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<td>(k) Migrant remittances</td>
<td>Total Household Income</td>
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<td>Households</td>
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<td>4. CAPITAL</td>
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<td>(l) Savings (incl. investments)</td>
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<td>Total Savings</td>
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<td>5. Rest of WORLD</td>
<td>(d) Purchased inputs by place purchased</td>
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<td>TOTAL</td>
<td>(e) Total Production Expenditures</td>
<td>Total Factor Payments</td>
<td>Total Household Expenditures</td>
<td>Total Investments</td>
<td>Total Market Sales</td>
<td>Total Incomes and Expenditures</td>
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Business enterprise survey: initial steps

• Determine zone of influence (ZOI)
  – Village or cluster of villages?
  – How to deal with businesses on the periphery, rotating markets, itinerant traders
  – Trade off: wider you search, weaker the linkage

• Non agricultural business only
  – Agricultural activities adequately captured in household survey
Business enterprise survey: sampling—as random as you can

- Stratify by major business types
  - Distribution of non-agricultural businesses
  - Categorize: retail, manufacturing, services
  - Determine sample size
- Data source for stratification
  - Secondary data, census of program communities, community survey listing
- Data source for sample frame
  - Census or community survey listing
- Last option: revealed stratification and sample frame
  - Update as survey progresses
Household survey: some simple modifications

• Captures three types of data:
  – Household agricultural enterprises
  – Household non-agricultural enterprises
  – All interactions in which cash is exchanged
    • Consumer purchases
    • Transfers
      – public and private, incoming and outgoing
    • Wage labor
    • Credit and savings
Household survey: data challenges

- **Annualization of seasonal values**
  - Food expenditure/consumption
    - From consumption last week to roughly gauging annual consumption
      - For how many months (or weeks) of previous 12 months (or 52 weeks) did you consume [food item]?
      - How much do you normally spend per week on [food item] when you consume [food item]?
  - Wage employment

- **Inserting numerous “where” questions**
  - Or include summary matrix at survey end

- **Expanding impact evaluation sample to include non eligible households**
Moving forward

• PtoP project is making two relevant contributions
  – A new initiative in merging household surveys geared towards poverty and social outcomes with agricultural content
    • Facing the challenge in introducing standard economic activity modules into ongoing cash transfer impact evaluations
    • We welcome advice
  – Local economy analysis of cash transfer programs, using primary data collection linked to impact evaluation, is an innovation
Our websites

From Protection to Production Project
http://www.fao.org/economic/PtoP/en/

The Transfer Project
http://www.cpc.unc.edu/projects/transfer