Relevance of linkages between Zambia’s social cash transfer and agriculture: market participation and farmers’ efficiency

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The context

- Most beneficiaries of the Zambia Social Cash Transfer (SCT) live in rural areas, are engaged in agriculture and work for themselves
  - >80% produce crops; >50% have livestock

- Most grow maize, cassava or rice and use traditional technology and low levels of modern inputs
  - Most production consumed on farm

- Most have low levels of productive assets
  - ½ hectare of land, a couple of chickens, basic tools, low levels of education

- Engaged on farm, non farm business (40%), casual wage labour (25%)

- About 50% of children work on the family farm
The Zambia Child Grant (CG) model of the SCT in a nutshell

- **Objective**: alleviating poverty among the poorest and block its intergenerational transmission

- **Targeting mechanism**:
  - *Categorical*: reaching any household with a child under 5
  - *Geographical*: in three districts with highest rates of mortality and morbidity among children under 5

- Payments **unconditional** and **flat**, ie regardless of household size (55,000 Zambian kwacha, increased to 60,000 in 2013)

- Impact evaluation designed as a **longitudinal RCT** with two levels of random selection of participants, at the Community (CWAC) and household level.

- Baseline conducted in 2010, follow-up in 2012
Evidence from impact evaluation

- Child Grant model had positive impacts on agriculture (AIR, 2013; 2014; Daidone et al., 2014)
- Impacts large and significant, especially for livestock accumulation and investment in crop inputs
- Labour supply switched from off-farm casual labour to on-farm agriculture and off-farm non agricultural businesses
Questions

1. How did the Child Grant contribute to market participation?

2. Did the Child Grant contribute to enhance crop production efficiently?
How did the Child Grant contribute to market participation?
Commercialization of smallholders

• Little or no connection to output and input markets.

• High costs to move out of self sufficiency.

• What is holding them back from participating in market exchange?
Barriers to trade

- Food self-sufficiency as insurance mechanism
- Food security concerns
- Lack of liquidity to invest in storage facilities
- Transaction costs
Transaction costs

• The observable and unobservable costs associated with arranging and carrying out a market transaction

• Tend to be household specific, stemming from differential access to assets, market information and infrastructure

• Proportional (PTCs) or fixed (FTCs)
Role of cash transfers

- The extra income offered by CTs may be used by farmers to cover transaction costs and overcome entry barriers to goods markets.
  - Covering transportation costs
  - Allowing farmers to purchase communication tools and services. These entail better and timely access to market information
  - Enhancing the social status of the beneficiary in the community fostering access to local social networks in which ideas and information are exchanged
  - Buying membership in formal marketing and farming organizations
Main results

- **Output markets**: increase in the share participating as a seller by 12.7 percentage points (pp) and in the amount sold by 202,000 ZMK.

- **Input markets**: increase in the share participating as buyers only by 8.3 pp. Increase in quantity purchased not statistically significant.
Results by sub-groups

- Cash transfers produce higher impacts, both in terms of participation and volume of revenues and expenditure for households that face more binding costs.
- The program had larger impact for beneficiaries relatively more land endowed who were already selling large quantities of crop in the market.
- For seeds purchases the bulk of the program impacts are concentrated near the center of the distribution. This results in limited distributional impacts of the program.
Farmers’ technical efficiency
What is Technical Efficiency (TE)?

*Input approach:* the ability to *minimise inputs* keeping outputs fixed.

*Output approach:* the ability to *maximise outputs* keeping inputs fixed.

A *relative* concept: we compare production with a theoretical maximum, the frontier, given the existing technology.
How do we expect cash transfers to improve technical efficiency

- Release liquidity constraints:
  - Purchase/rent of better inputs/assets
  - Overcome entry barriers in labour market

- Higher labour productivity through:
  - Improved nutritional status of family members
  - Better health and education

- Knowledge
  - Proportions of inputs change
How do we expect cash transfers to reduce technical efficiency

- Income effects:
  - Reduction of household labour supply
  - Crowding out of private transfers

- More off-farm opportunities subtract time to farm management

- Knowledge
  - Proportions of inputs change

Ambiguous impact on TE
Summary of Results

• Average technical efficiency is 48 percent

• CGP increased inefficiency by 23 percent (control households efficiency increased much more than treatment)

• A decrease in inefficiency for:
  ▪ Households with income above the median
  ▪ Households that have received other government programs apart from CGP
Take-away message: articulating social protection and agriculture

- Cash transfers are useful but not a magic bullet
- Agricultural programmes are necessary to address structural constraints
- Long-term, predictable package of social protection and complementary measures
Working Papers

1. Stuck exchange: can cash transfers push smallholders out of autarky?

2. Impact of Cash Transfers on Technical Efficiency of Agricultural Households in Zambia: A Stochastic Frontier Analysis
Thank you !!!
Empirical strategies

• Smallholders commercialization:
  - Heckman selection model for both sellers and buyers
  - Interaction terms and quantile regressions for heterogeneity analysis

• Farmers’ efficiency:
  - Stochastic frontier methods, netting out unobserved heterogeneity from efficiency
  - Interaction terms for heterogeneity analysis