



Food and Agriculture Organization
of the United Nations

Social Protection

From Protection to Production

2018 Nordic conference on development economics

Causal pathways of the productive impacts of cash transfers: experimental evidence from Lesotho

Ervin Prifti

FAO of the United Nations

Helsinki, June 12th 2018



Agenda

- [Motivation]
- Program and data
- Empirical strategy
- Results



Motivation

- In 2018 more than 100 countries were using **Cash Transfers (CT)** as a social assistance tool
- Globally, developing and transition countries spend an average of 1.5 percent of GDP on SSN programs.
- The increase in spending has translated into a substantial increase in program coverage around the world.
- The primary objective is to reduce poverty by supporting consumption and to block its intergenerational transmission through human capital accumulation (education and health)
- CTs are shown to increase crop and livestock production when implemented in rural areas.
- CTs can lead to increased farm production via different channels: by changing household labor supply and hired labor demand, by promoting investment in farm technologies and by encouraging households to engage in riskier activities offering higher returns
- Knowledge of which mechanism is operating is important to policy makers to understand how a program produces results or why it fails to do so.



Agenda

- Motivation
- [Program and data]
- Empirical strategy
- Results



Program and data

- **The Child Grant Program (CGP)** is Lesotho's largest unconditional cash transfer program targeted to poor and vulnerable households
- Transfer value originally set at 360 LSL (\$36, I\$79) quarterly.
- Eligibility of HHs in the village was based on PMT and community validation
- Study design based on community-randomized controlled trial implemented in 96 electoral divisions.
- Randomization successful. Sample size of 1353 HHs
- Longitudinal study with BL in 2011 and FU in 2013



Program and data

	Controls		Treated		Difference	
Female headship	0.53	[0.50]	0.49	[0.50]	0.042	[1.325]
Household size	5.54	[2.17]	5.85	[2.48]	-0.31*	[-2.47]
Age household head	51.96	[15.43]	51.99	[15.20]	-0.04	[-0.05]
Edu. household head (years)	4.18	[3.04]	3.98	[2.92]	0.20	[1.23]
Single headship	0.59	[0.49]	0.55	[0.50]	0.03	[1.24]
Dependency ratio	2.93	[3.25]	2.85	[3.04]	0.085	[0.49]
Land operated (ha)	0.70	[1.48]	0.89	[1.44]	-0.19*	[-2.39]
TLU owned	0.57	[0.89]	0.70	[(1.04]	-0.13*	[-2.45]
Price maize (LSL/kg)	4.01	[1.33]	3.94	[1.08]	0.08	[1.02]
Price sorghum (LSL/kg)	6.35	[4.73]	6.57	[3.64]	-0.22	[0.97]
Drought in community	0.40	[0.49]	0.43	[0.50]	-0.04	[-1.07]
Observations	647		706		1353	



Program and data

	Baseline			Follow-up		
	Controls	Treated	diff	Controls	Treated	diff
Value of ag. production (LSL)	411.38 [1294.33]	451.71 [1055.04]	40.33 [-0.62]	1010.79 [2310.02]	1447.25 [3072.44]	436.46** [-2.90]
Family farm labour (hours/week)	23.91 [33.47]	25.70 [35.87]	1.79 [-0.95]	24.86 [33.69]	28.71 [40.04]	3.84 [-1.91]
Hired-in labour (hours/week)	0.56 [4.63]	1.50 [10.04]	0.95* [-2.26]	1.11 [8.00]	1.16 [7.41]	0.05 [-0.11]
Family paid labour (hours/week)	14.32 [24.10]	14.74 [24.90]	0.43 [-0.32]	13.73 [27.05]	8.78 [21.05]	-4.94*** [3.73]
Observations	647	706	1353	647	706	1353



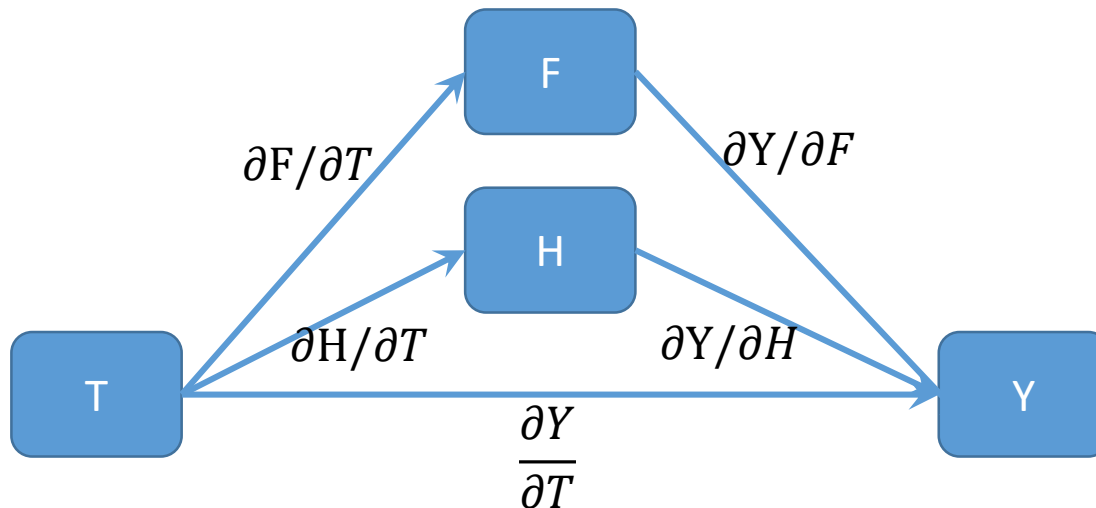
Agenda

- Motivation
- Program and data
- [Empirical strategy]
- Results

Empirical strategy

- Production function
 $Y=y(F,H,X,\theta)$
- Total, direct and indirect effects of cash on farm production

$$\frac{dY}{dT} = \frac{\partial Y}{\partial T} + \frac{\partial Y}{\partial F} * \frac{dF}{dT} + \frac{\partial Y}{\partial H} * \frac{dH}{dT} \quad \Rightarrow \quad ATE = ADI + AIE$$





Empirical strategy

- Structural Equation Model for the direct and indirect effects

$$F_{it} = \delta_0 + \delta_P P_{it} + \delta_{PT} P_{it} T_i + \delta_X \mathbf{X}_{it} + v_{it}$$

$$H_{it} = \gamma_0 + \gamma_P P_{it} + \gamma_{PT} P_{it} T_i + \gamma_X \mathbf{X}_{it} + u_{it}$$

$$y_{it} = \tau_0 + \tau_P P_{it} + \tau_{PT} P_{it} T_i + \tau_X \mathbf{X}_{it} + \tau_F F_{it} + \tau_H H_{it} + \varepsilon_{it}$$

$$\tau_{PT} = \text{ADI}$$

$$\delta_{PT} \tau_F + \gamma_{PT} \tau_H = \text{AIE}$$

- We also test the hypothesis of reallocation of household labour from paid off-farm work to on-farm work

$$M_{it} = \kappa_0 + \kappa_P P_{it} + \kappa_{PT} P_{it} T_i + \kappa_X \mathbf{X}_{it} + k_i$$



Empirical strategy

- Take first differences to correct for possibly endogenous mediators

$$\tilde{y}_{it} = \tau_0 + \tau_T T_i + \tau_X \tilde{X}_i + \tau_F \tilde{F}_i + \tau_H \tilde{H}_i + e_i$$



Agenda

- Motivation
- Program and data
- Empirical strategy
- [Results]



Results

OLS estimates

Direct effect (τ_{PT})	Indirect effect	Total effect
305.81**	27.21	333.02**
[132.09]	[29.28]	[131.20]



Results

	Family farm labour		Hired labour		Value of production	
PT	2.68	[1.87]	-0.13	[0.41]	305.81**	[132.10]
...
Hired labour					19.79**	[8.90]
Family farm labour					11.11***	[1.85]



Results

First Difference estimates

Direct effect (τ_{PT})	Indirect effect	Total effect
359.20***	22.29	381.50**
[131.39]	[19.64]	[133.38]



Results

Effects of cash transfers on paid labour supply

	<u>Paid labour</u>	
P	-2.53*	[1.34]
PT	-5.16***	[1.32]



Conclusions

- Converging evidence that cash transfers lead to increased farm production
- Effect is not mediated by labour variables
- Although the use of family labour on the farm significantly contributes to increasing farm production ...
- ... neither family nor hired labour are affected by the program, thus interrupting the transmission channel
- However, net of the effects of farm labour there is a significant and positive (direct) effect of the transfer on farm production
- Other channels outside of transfer-induced labour changes are at work
- Easing of liquidity and risk constraints allowing farmers to invest in labour-saving technologies, such as renting mechanised tools (for example, tractors) or in yield-enhancing inputs (for example, fertilizers, improved seeds).
- No evidence of family labour reallocation



Food and Agriculture Organization
of the United Nations



Thank you