

UNDERSTANDING RISK AND TIME PREFERENCES IN A CONTEXT OF CREDIT CONSTRAINT: EVIDENCE FROM A RCT IN LESOTHO

Francesca Viberti⁺, Silvio Daidone⁺ & Noemi Pace^{+§}

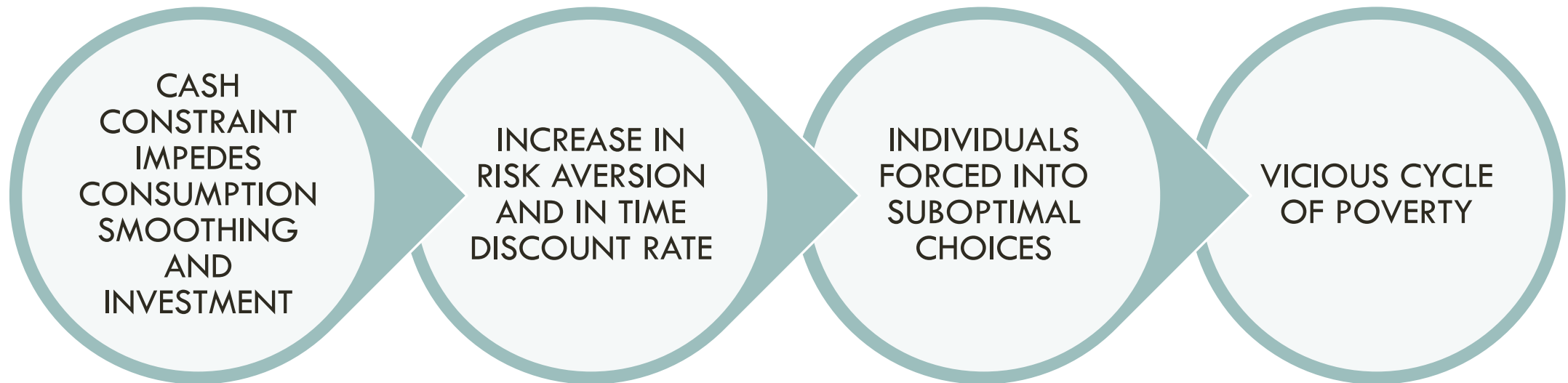
⁺ Food and Agriculture Organization of the United Nations (FAO)

[§] Università degli studi di Teramo

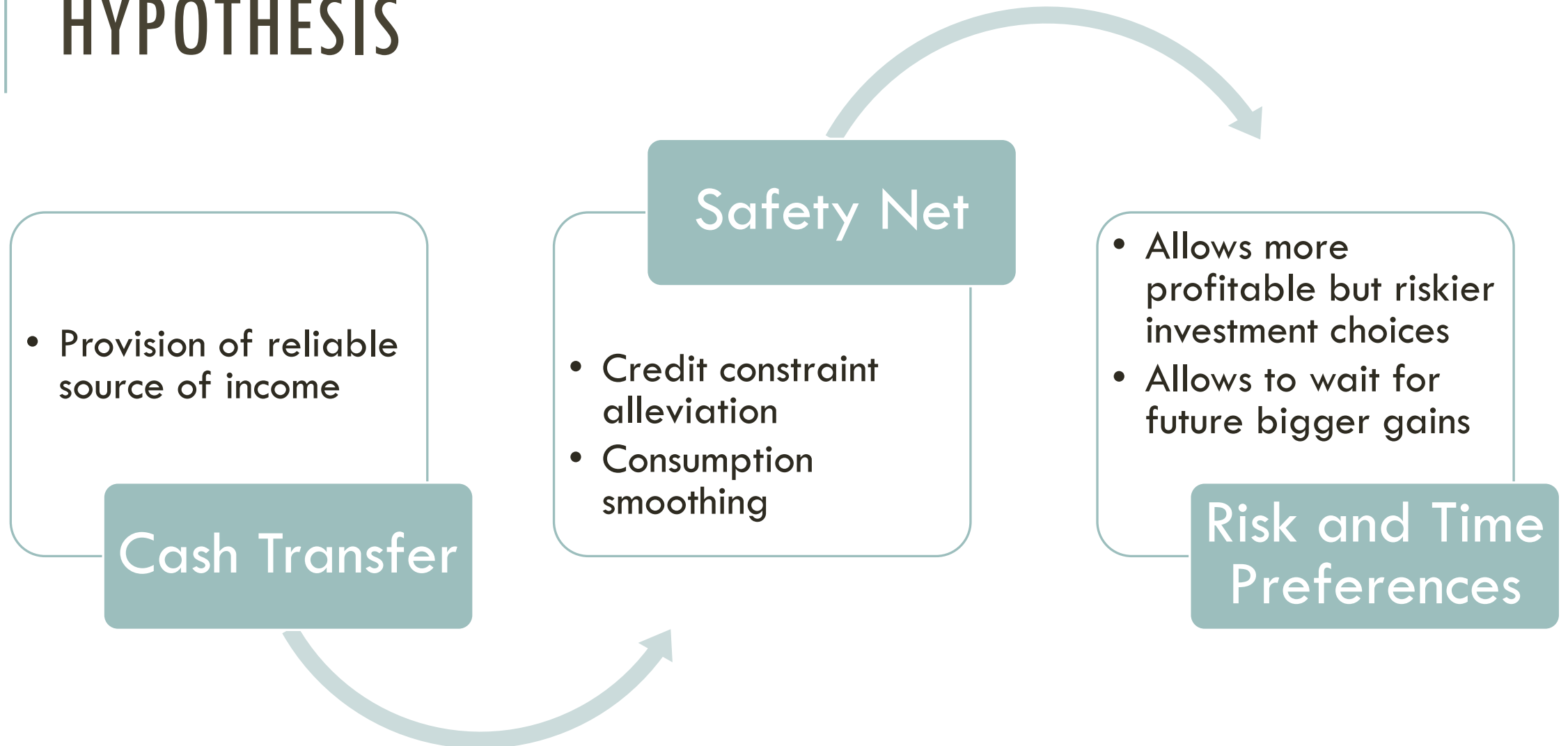
RESEARCH QUESTION

Does the provision of an additional and reliable source of income affect individuals' risk behaviour and intertemporal decision making?

MOTIVATION



HYPOTHESIS



CONTRIBUTION OF THE PAPER

-
1. Assess impact of cash transfers on behavioural changes (Two specific sections in the survey on time and risk preferences)
-
2. Heterogeneity of results
-

THE LESOTHO CHILD GRANTS PROGRAMME

Type of programme: unconditional cash transfer with messaging to the beneficiaries

Target: Orphans and Vulnerable Children (OVC) between 0 and 18 years old living in poor households

Targeting mechanism: combination of community validation and proxy means-testing

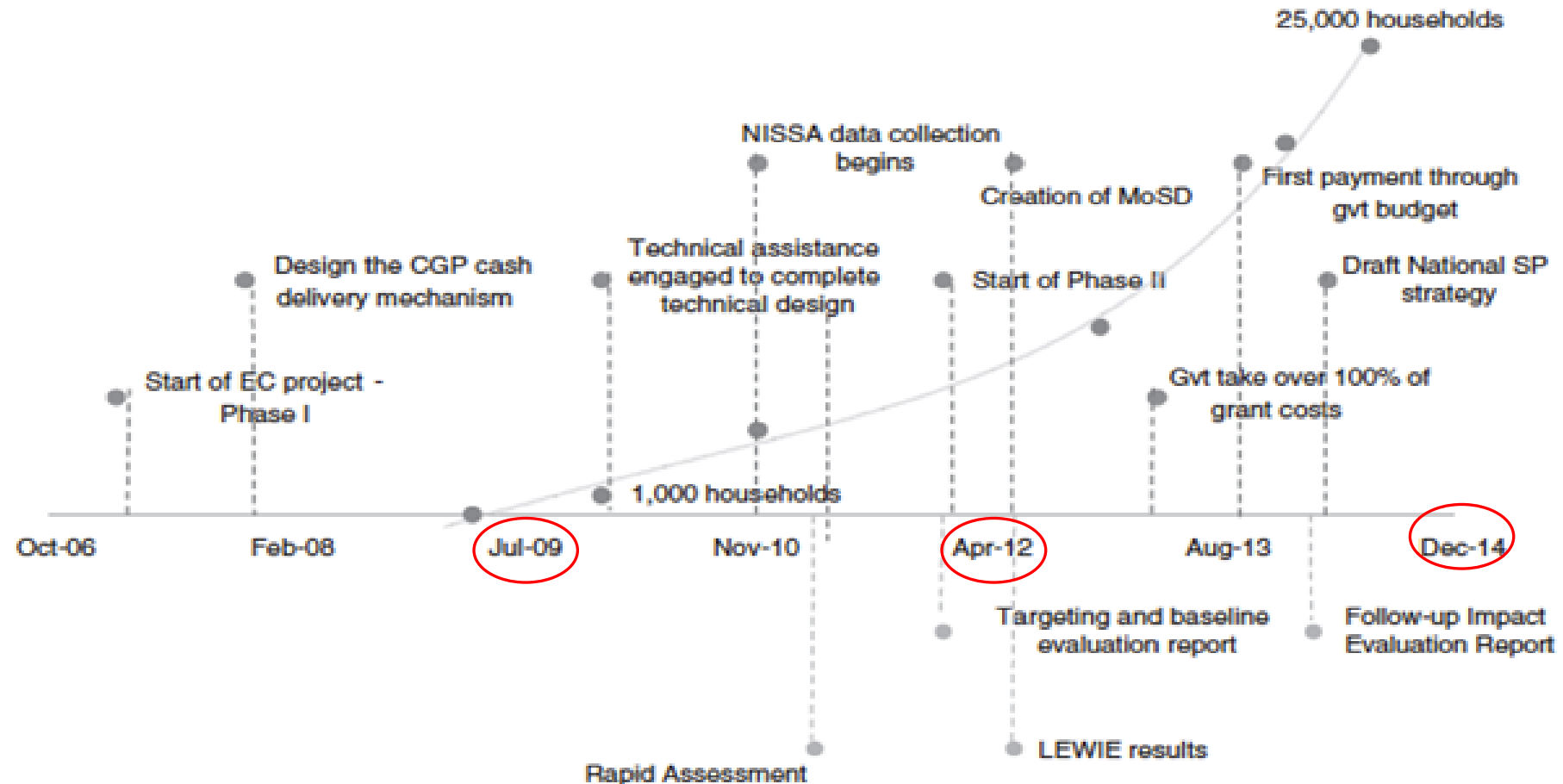
Benefit: between M360 (US\$30) and M750 (US\$65) depending on the number of children up to a maximum of 5

Frequency: quarterly payments

Objective: improve life condition of OVC by reducing malnutrition, improving health status and increase school enrollment



THE LESOTHO CHILD GRANTS PROGRAMME - EVOLUTION



DATASET

1.

Two-wave panel dataset (baseline 2012 and follow-up 2014) with 2 different surveys (household & individual and community level)

2.

Characteristics at baseline are broadly balanced

3.

Baseline and Follow-up survey both conducted in the same period to avoid seasonality bias

4.

Sample attrition of 8.8%, majority of households missing from control group (-12.3%)

5.

Randomized Delayed Intervention with public lottery as assignment criteria

6.

Eligible Household identified through combination of proxy-means testing and community validation

METHODOLOGY

$$Y_{it} = \alpha + \beta_1 T_i + \beta_2 W_t + \beta_3 T_i * W_t + \sum \gamma_{i,2011} * W_{2011} X_{it_{2011}} + \sum \gamma_{i,2013} * W_{2013} X_{it_{2011}} + \epsilon_{it}$$

Intent-to-treat (ITT) estimate from the weighted least square regression

Sampling weights adjusted by the inverse of attrition weights

Non-incentivized intertemporal tasks

e.g. do you prefer M 1000 now, or M 1000+X in one month? (with X increasing)

Administered to a selected representative for each household

Design forces consistent responses throughout the tasks

Time preferences measured through a binary variable (0 never willing to wait, 1 willing to wait at some point of the task)

TIME PREFERENCES

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	simple DID	DID with controls	male head	female head	less poor	ultra-poor	no credit	with credit
treatment	-0.0661	-0.0712	-0.0921 ⁺	-0.0348	-0.0364	-0.0843 [*]	-0.0403	-0.0896 ⁺
	(0.0501)	(0.0439)	(0.0518)	(0.0566)	(0.0623)	(0.0414)	(0.0642)	(0.0464)
follow-up	-0.0393	-0.523 ^{**}	-0.656 [*]	-0.419	-0.668 ^{**}	-0.431	-0.739 ⁺	-0.321
	(0.0383)	(0.196)	(0.265)	(0.296)	(0.225)	(0.313)	(0.405)	(0.204)
DID	0.0917	0.116[*]	0.167[*]	0.0452	0.0445	0.168^{**}	0.00836	0.144^{**}
	(0.0579)	(0.0487)	(0.0643)	(0.0663)	(0.0662)	(0.0538)	(0.103)	(0.0475)
Obs.	2689	2689	1320	1369	1350	1311	601	2086
R²	0.003	0.066	0.118	0.076	0.104	0.103	0.166	0.080

CGP BRINGS ABOUT AN INCREASE IN RESPONDENTS' PATIENCE, ESPECIALLY ULTRA-POOR HOUSEHOLDS

Non-incentivized risk tasks

e.g. do you prefer X immediately, or tossing a coin and having the chance to win M 1000? (with X decreasing)

Administered to a selected representative for each household

Design forces consistent responses throughout the tasks

Risk preferences measured through a binary variable (0 always risk averse, 1 willing to risk at some point of the task)

RISK PREFERENCES

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	simple DID	DID with controls	male head	female head	less poor	ultra-poor	no credit	with credit
treatment	-0.0394	-0.0565	-0.138**	0.0338	0.0372	-0.140**	-0.0488	-0.0632
	(0.0465)	(0.0410)	(0.0482)	(0.0497)	(0.0606)	(0.0518)	(0.0687)	(0.0471)
follow-up	-0.0493	-0.746**	-1.159**	0.146	-0.946**	-0.444	-0.582	-0.688*
	(0.0410)	(0.258)	(0.304)	(0.349)	(0.316)	(0.314)	(0.478)	(0.268)
DID	0.00193	0.0238	0.124⁺	-0.0910	-0.0995	0.144[*]	0.00358	0.0308
	(0.0632)	(0.0520)	(0.0641)	(0.0741)	(0.0824)	(0.0657)	(0.102)	(0.0549)
Obs.	2680	2680	1317	1363	1340	1312	600	2078
R²	0.004	0.067	0.094	0.101	0.099	0.090	0.154	0.072

NO SIGNIFICANT IMPACTS ON ATTITUDES TOWARDS RISK-TAKING OVERALL, BUT GREATER RISK-TAKING FOR ULTRA-POOR

Direct Elicitation Methodology: set of questions that directly elicits the status of respondents as constrained or unconstrained

Administered to a selected representative for each household

Credit constraints measured through a binary variable (0 not able to access any type of credit in the previous 12 months, 1 obtained a loan)

CREDIT CONSTRAINTS

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	simple DID	DID with controls	male head	female head	less poor	ultra-poor	Low TLU	High TLU
treatment	-0.0706*	-0.0729*	-0.0372	-0.117**	-0.0408	-0.0864 ⁺	-0.114**	-0.00674
	(0.0318)	(0.0312)	(0.0450)	(0.0388)	(0.0328)	(0.0460)	(0.0410)	(0.0360)
follow-up	0.00545	0.128	0.187	-0.0493	0.350 ⁺	-0.232	0.150	0.0189
	(0.0325)	(0.187)	(0.266)	(0.238)	(0.200)	(0.313)	(0.226)	(0.292)
DID	0.0382	0.0417	0.00141	0.0932⁺	0.0194	0.0622	0.125**	-0.0500
	(0.0400)	(0.0382)	(0.0586)	(0.0501)	(0.0472)	(0.0457)	(0.0472)	(0.0551)
Obs.	2691	2691	1320	1371	1350	1313	1312	1379
R²	0.005	0.069	0.095	0.091	0.101	0.120	0.103	0.111

LACK OF SIGNIFICANT IMPACTS ON ACCESS TO CREDIT, THOUGH INCREASED ACCESS FOR THOSE WITH LOW LIVESTOCK OWNERSHIP

	formal				informal			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	less poor	ultra-poor	low TLU	high TLU	less poor	ultra-poor	low TLU	high TLU
treatment	0.0323	-0.0453	-0.0205	0.00642	-0.0725 ⁺	-0.0574	-0.116 [*]	0.00243
	(0.0308)	(0.0278)	(0.0252)	(0.0318)	(0.0425)	(0.0486)	(0.0444)	(0.0436)
follow-up	-0.0316	0.0153	0.0928	0.0460	0.451 [*]	-0.328	0.0551	-0.0975
	(0.128)	(0.163)	(0.171)	(0.139)	(0.216)	(0.348)	(0.277)	(0.308)
DID	-0.107^{**}	0.0116	0.0171	-0.0968[*]	0.0721	0.0259	0.113[*]	-0.0359
	(0.0346)	(0.0394)	(0.0393)	(0.0374)	(0.0530)	(0.0478)	(0.0491)	(0.0551)
Obs.	1350	1313	1312	1379	1350	1313	1312	1379

INCREASED ACCESS TO CREDIT FROM INFORMAL SOURCES

SUMMARY

1.

CGP have a **significant impact on time preferences**, and more specifically on their propensity to wait for future bigger gains over immediate smaller prizes

2.

Overall, **risk preferences and access to credit were not affected**

3.

Heterogeneity analysis reveals interesting patterns: **ultra-poor households benefit more**, showing a more future oriented behavior and a moderate increase in risk attitude

4.

Credit constraints affects significantly inter-temporal decision making, as only household with access to credit reduce their impatience

5.

Vulnerable households with low level of livestock assets **can get access to credit** in the informal sector, while cash transfer crowds out formal credit for households with greater livestock endowment

Thank you!