

Impact of the CT-OVC on Children's Human Capital

Kenya CT-OVC Evaluation Team
Naivasha, Kenya January 2011
(work-in-progress)

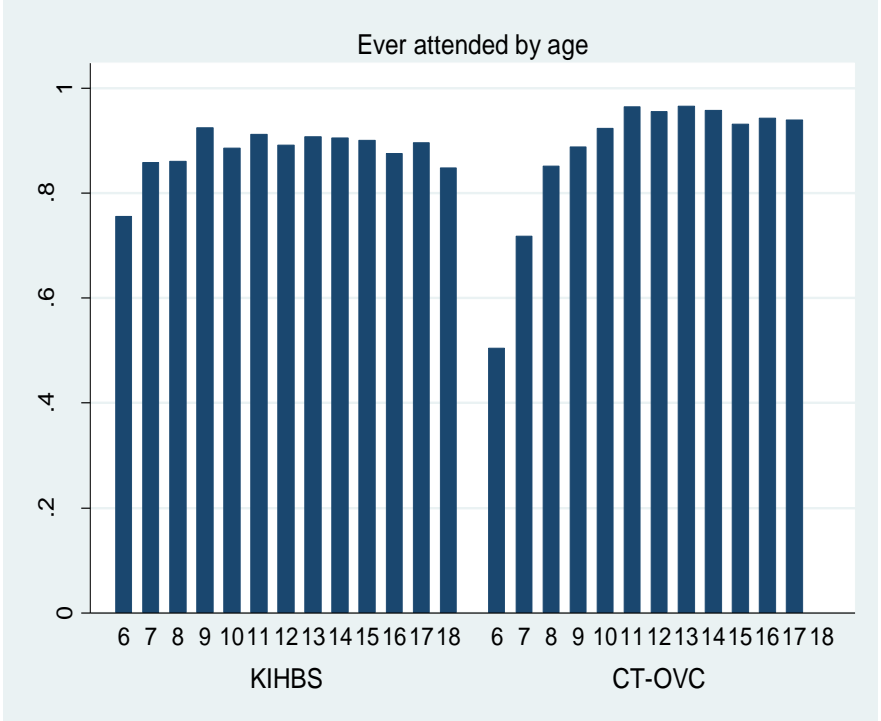
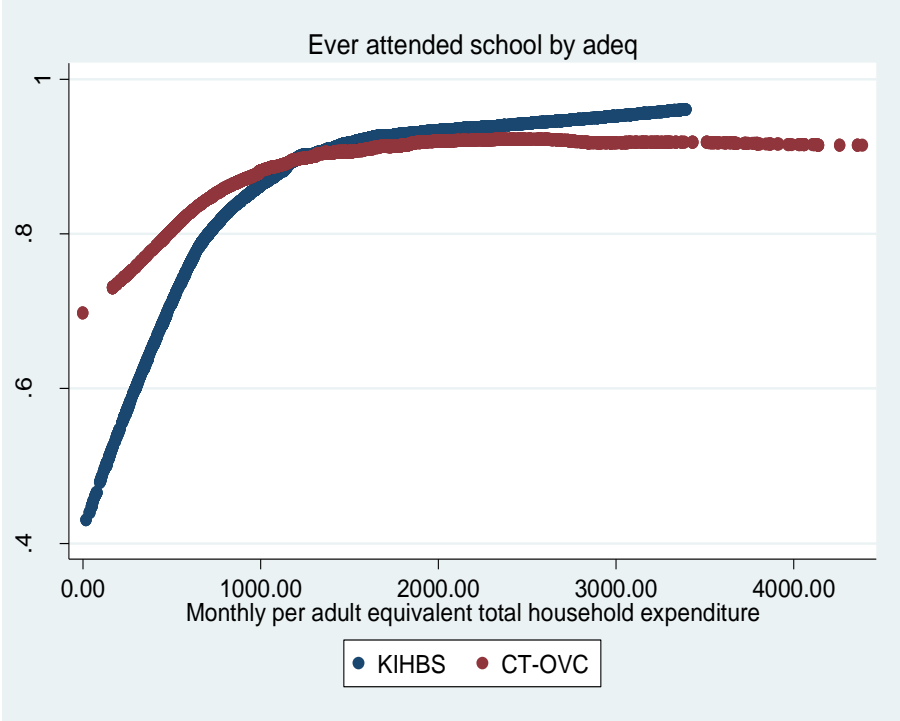


What impact should we expect? Grant exerts an income effect

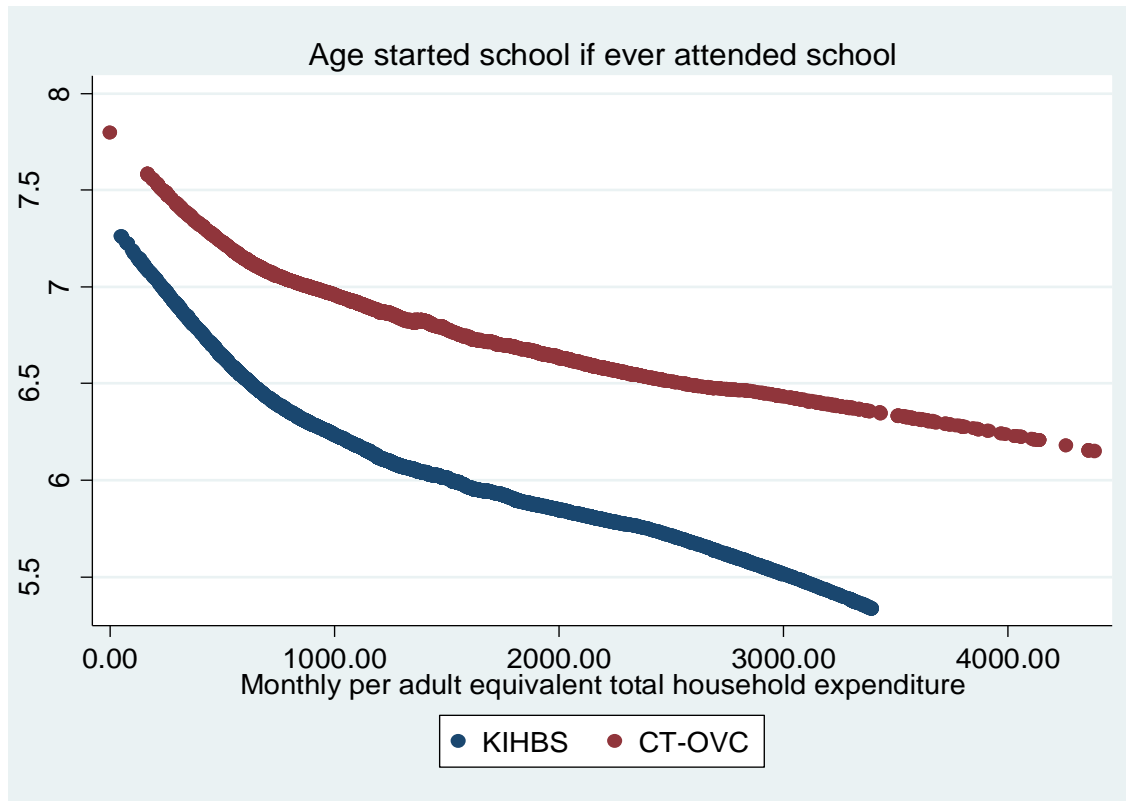
- Is income a constraint in the schooling decision?
 - Examine ex-ante (pre-program) relationship among school indicators and household income (expenditures)
 - Examine overall (ex-ante) outcome levels to see where there is room for improvement
 - Are income effects or outcome levels different by age group?
 - Are time/monetary factors more binding for some families?
 - Distance to facility, imposition of extra fees, strict enforcement of uniform rules



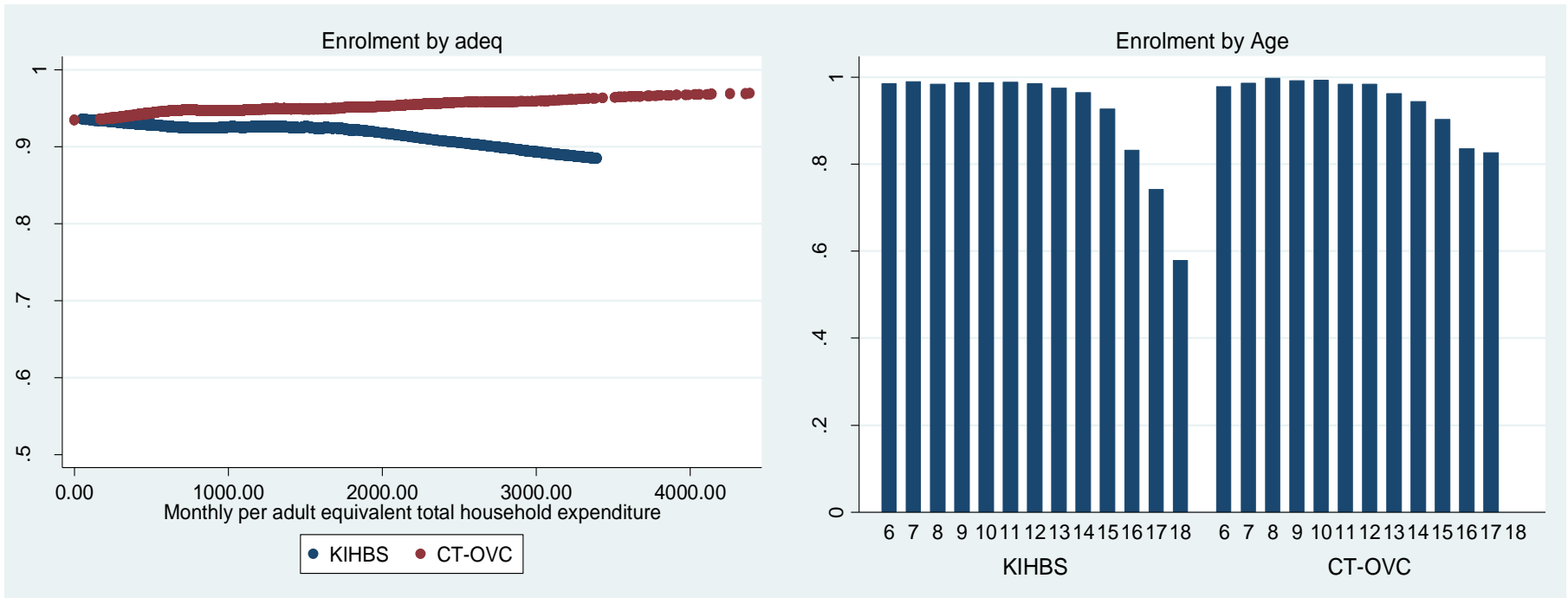
Ever attended school: Poorest households and younger ages



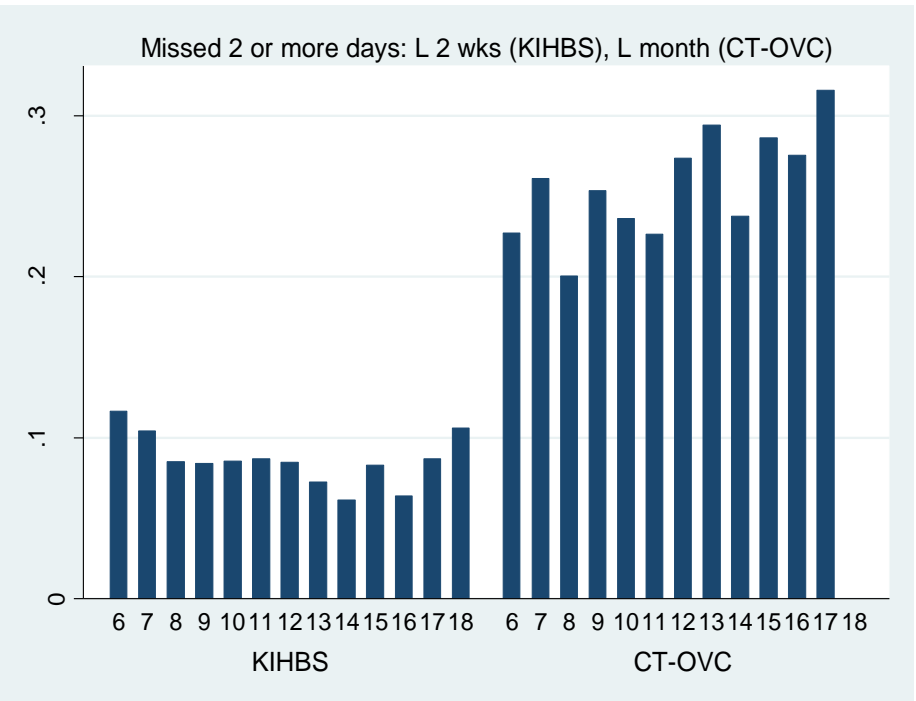
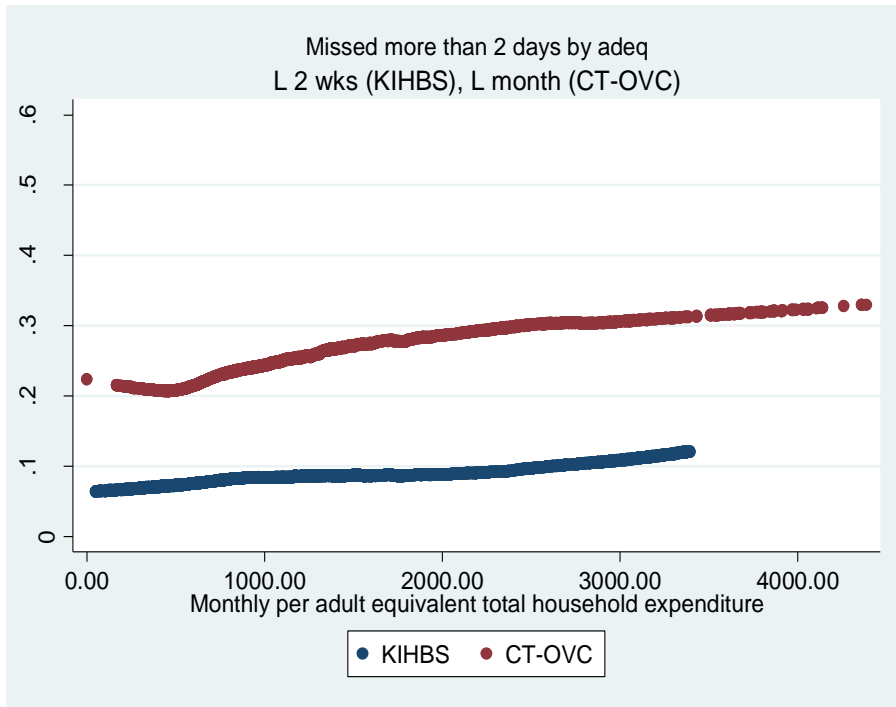
Income effect for age started school



Enrollment drops off at age 14, income effect is minimal

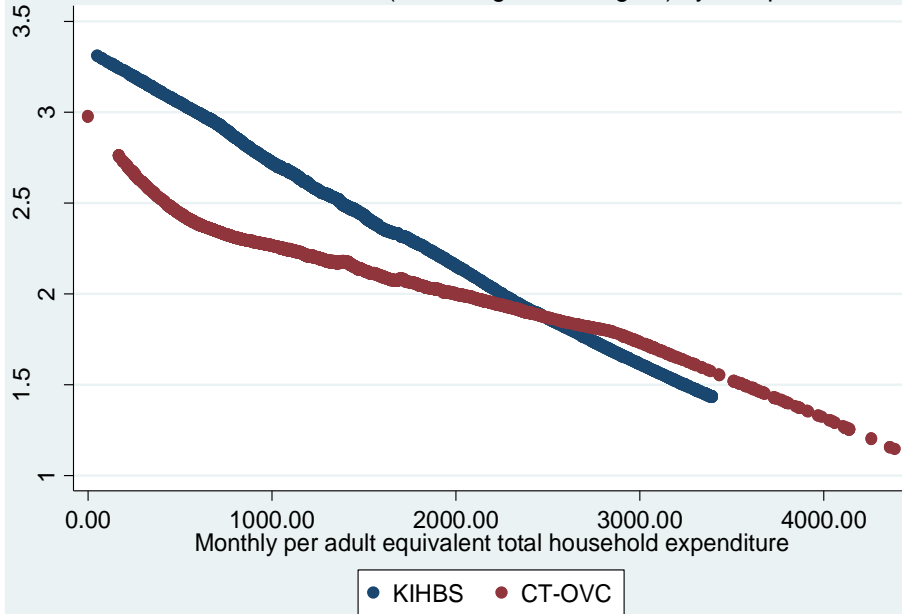


Income effect for days missed flat; more frequent at younger and older ages

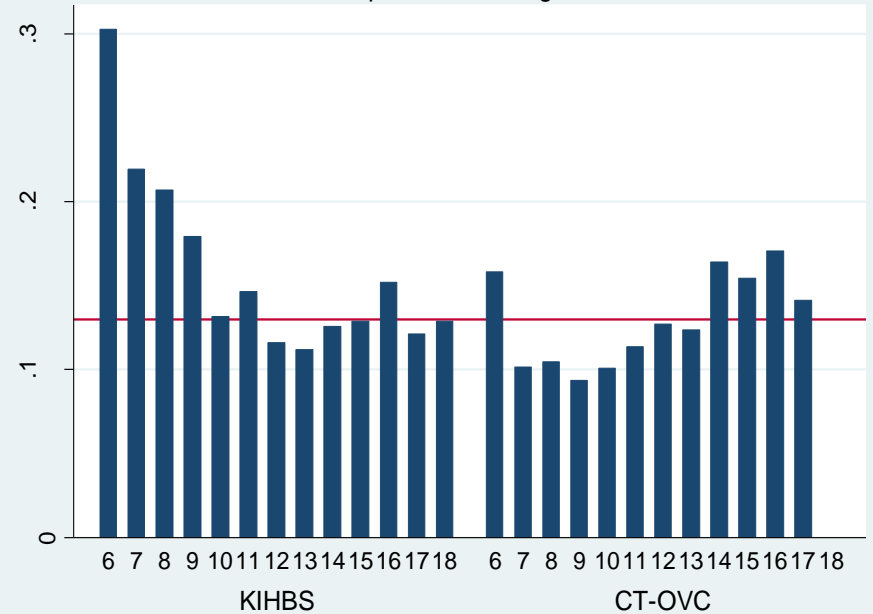


Strong income effect on grade-for-age; repetition seems more frequent at younger and older ages

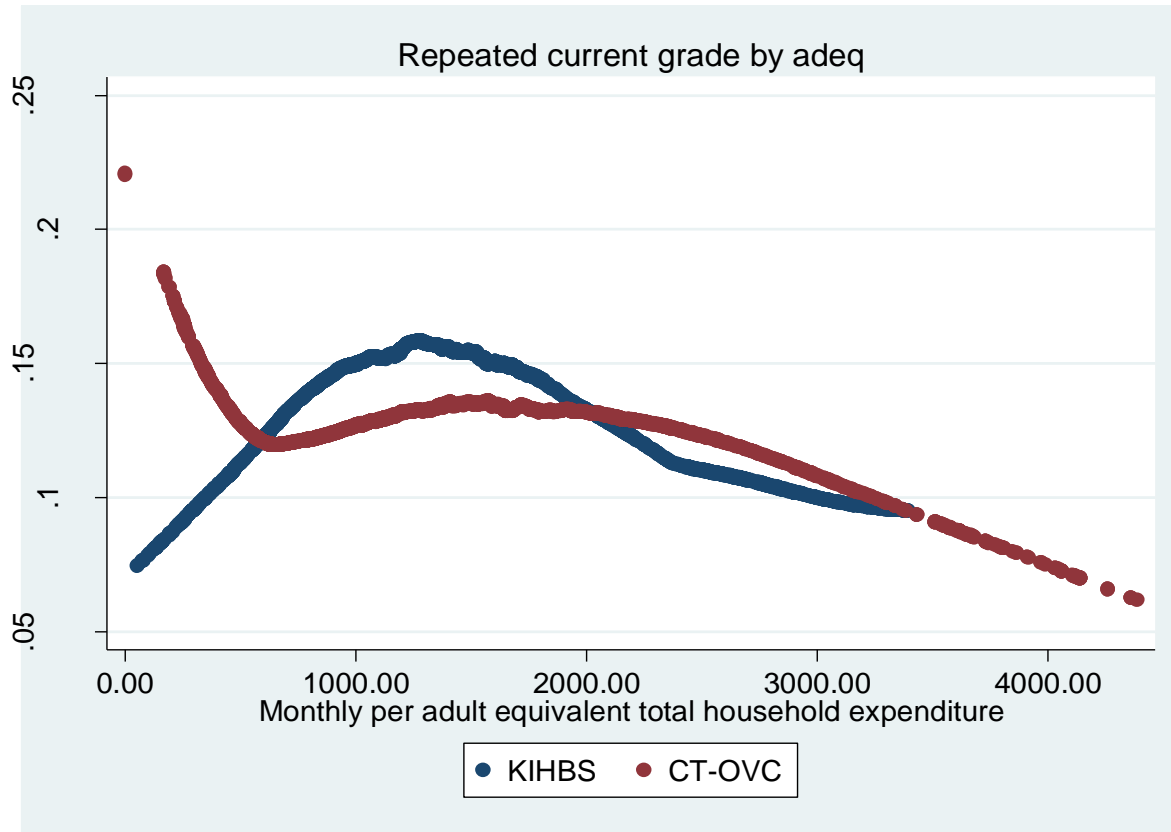
Grades behind (assuming start at age 6) by adeq



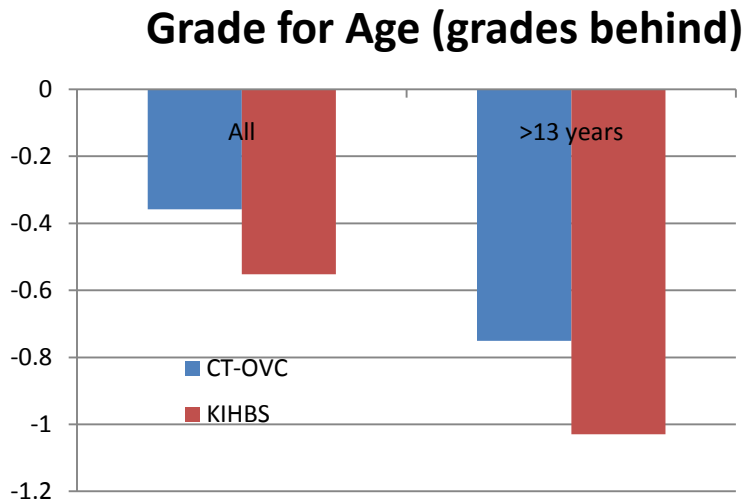
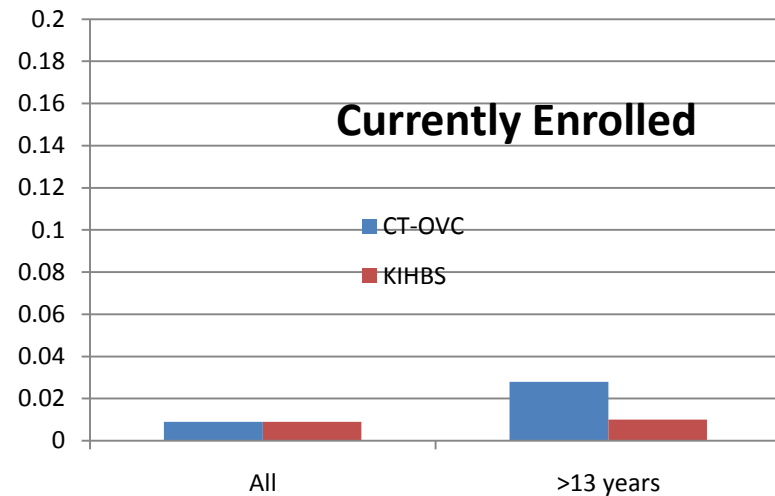
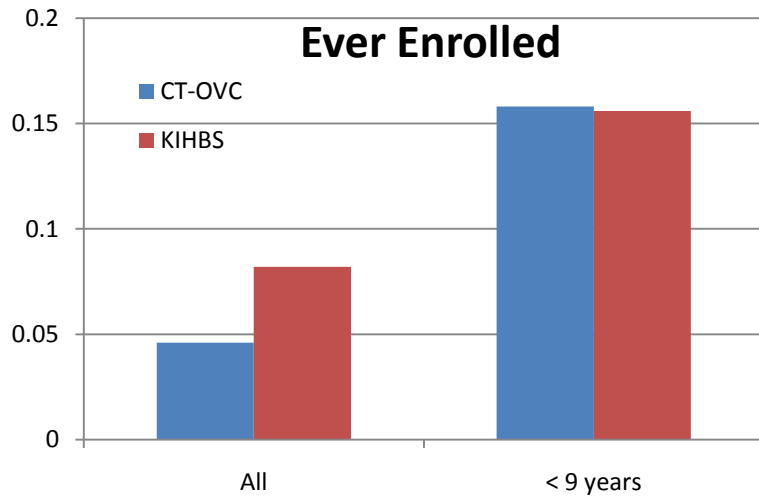
Repeated current grade



Non-linear income effect for repetition



Regression estimates of income effects: large effects for ever enrolled, grade-for-age and enrollment for older kids



Outcomes and hypotheses

Outcome	Impact	Remarks
Ever attended	Yes	Stronger at younger ages
Current enrollment	No	Maybe some impact at younger ages; driven by drop-outs and returners
Grade for age	Yes	Driven by repetition and on-time entry of younger kids; also affected by school returners
Days missed	No	
Progression (repetition)	?	Non-linear, strong at very low income and then higher income; possibly stronger for youngest and oldest kids
Returners	?	Will affect grade-for-age
Drop-outs	?	Will affect grade-for-age



Positive impacts on ever enrolled, no impact on currently enrolled

	Ever Enrolled		Currently Enrolled	
	All	age < 8 years	All	age >13
	(1)	(2)	(3)	(4)
Dif-in-dif impact	0.02 (2.97)	0.065 (2.10)	0.008 (1.58)	0.015 (1.23)
percent change from mean	2.29	11.30	0.84	1.70
Observations	9587	1414	8499	3150
R-squared	0.112	0.089	0.057	0.045
baseline mean	0.874	0.575	0.949	0.884



No impact on progression, strong impact on grade-for-age. How can g/a improve?

	<u>Grade Progression</u>			<u>Grade for Age</u>	
	All	age>13	age <8	All	age > 13
	(5)	(6)	(8)	(9)	(10)
Dif-in-dif impact	-0.019 (-1.75)	-0.028 (-1.44)	-0.045 (-0.63)	-0.176 (-4.54)	-0.213 (-2.82)
percent change from mean	-2.19	-3.35	-5.27	-8.19	-6.29
Observations	5461	1765	418	8032	2776
R-squared	0.012	0.016	0.021	0.353	0.112
baseline mean	0.866	0.835	0.854	2.148	3.388

Puzzle?

Annotations: A green box labeled 'Puzzle?' with an arrow pointing to the 'All' column of the 'Dif-in-dif impact' row. Red circles highlight the 'All' and 'age > 13' columns of the 'Dif-in-dif impact' row.

G/A can improve through rapid progression, on-time school start, drop-out of high G/A T kids or low G/A C kids (next slide)



Older T kids more likely to return back to school!

VARIABLES	<u>Drop-Out</u>			<u>Returner</u>		
	All	age > 13	age < 14	All	age > 13	age < 14
	(1)	(2)	(3)	(4)	(5)	(6)
Treatment	-0.007	-0.014	-0.001	0.005	0.015	-0.001
	(-1.19)	(-0.95)	(-0.28)	(1.47)	(2.13)	(-0.58)
Observations	3632	1452	2180	3632	1452	2180
R-squared	0.040	0.018	0.005	0.006	0.009	0.003

Returners are on average one more grade behind than other kids; mean for T returners is 0.25 lower than C returners. This explains some of the G/A impact.



Outcomes and hypotheses revisited

v=verified

Outcome	Impact	Remarks
Ever attended	Yes v	Stronger at younger ages v
Current enrollment	No v	Maybe some impact at younger ages; driven by drop-outs and returners
Grade for age	Yes v	Driven by repetition (x) and on-time entry of younger kids (v); also affected by school returners (v)
Days missed	No v	(results not shown here)
Progression (repetition)	? No	Non-linear, strong at very low income and then higher income; possibly stronger for youngest and oldest kids
Returners	? Yes	Will affect grade-for-age
Drop-outs	? No	Will affect grade-for-age



Program impact should be greater when monetary costs are higher

- Construct the following 'prices' at community level
 - Primary school cost index: uniform and shoes policy enforced, extra fees charged
 - Primary school >2 kms away
 - Secondary school cost index: uniform and shoes policy enforced
 - Actual secondary fees (logs)
 - Secondary school >2 kms away



Program has mitigated the negative impact of some barriers for some outcomes

VARIABLES	<u>Primary Age 6-13 years</u>				<u>Secondary Age 14-17</u>			
	Ever Enrolled	Currently Enrolled	Progression	G/A	Ever Enrolled	Currently Enrolled	Progression	G/A
<u>DD interacted with:</u>	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Secondary >2 kms					-0.011 (-0.75)	-0.026 (-1.06)	-0.012 (-0.30)	-0.250 (-1.60)
Secondary Cost Index				??	0.043 (1.60)	0.037 (0.81)	-0.048 (-0.72)	-0.308 (-1.08)
Log Secondary Fees					-0.018 (-4.43)	-0.004 (-0.54)	0.025 (1.99)	-0.000 (-0.01)
Primary >2 kms	0.174 (5.41)	-0.016 (-1.29)	-0.009 (-0.19)	-0.227 (-1.42)				
Primary Cost Index	0.057 (5.32)	0.001 (0.17)	-0.001 (-0.04)	-0.329 (-6.40)				
Observations	6180	5280	3666	5191	3077	2965	1677	2615
R-squared	0.184	0.008	0.009	0.280	0.042	0.053	0.024	0.121

CT-OVC mitigating these barriers to access for those schooling outcomes



So, how do we assess the impact of the CT-OVC on schooling?

- Positive impacts established in precisely the areas hypothesized based on ex-ante analysis
 - Ever enrolled, on-time school initiation
 - Grade for age, driven by on-time entry and older kids returning to school
 - School returners have lower G/A among T versus C
 - Puzzle of grade progression—dirty data?



Other Policy Implications

- Program has mitigated negative effects of out-of-pocket and time costs
- Some of these costs or barriers are ‘manipulable’ (amenable to public policy)
 - Cost of uniform, shoes and ‘extra’ fees
 - Distance to primary and secondary school



What's on the agenda?

- Child labor side of story
- Solving the grade progression puzzle
- Heterogeneity of impacts by family size due to flat transfer level

