

Conditional Cash Transfers and School Achievement: Evidence from Colombia

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Motivation

- Conditional Cash Transfers (CCTs): big expansion in developing countries as a tool to break the intergenerational cycle of poverty through incentives to increase use of educational and health services.
- Large effects on enrollment, dropout and use of health services (Lagarde, 2008; Shady & Fiszbein, 2009).

Motivation

- Very little evidence on achievement
 - ✓ Positive effect on completion rates in Mexico (Behrman, Sengupta, & Todd, 2005).
 - ✓ Effects on probability of completing a grade successfully are mixed: in Mexico positive impact at primary school but a negative one at secondary school (Dubois, Janvry, & Sadoulet, 2007).
 - ✓ Impact on test scores: zero in Mexico (Behrman, Parker, & Todd, 2005); negative in Bangladesh (Ahmed & Arends-Kuenning, 2006).

Theoretical effects of CCTs on achievement

■ Positive channels

- ❑ Increase in school attendance (Skoufias & McClafferty, 2001)
- ❑ Perceived returns to education (Jensen, 2010)
- ❑ Income effect (Votruba-Drzal, 2003; Gershoff, et al 2007)
- ❑ Better nutritional status (Glewee, et al., 2001)

■ Negative channels

- ❑ Class size / resource constraints (Urquiola, 2006; Saavedra, 2009).
- ❑ Compositional effect (Angrist, Bettinger & Kremer, 2006)
- ❑ Peer effects (Lazear, 2001)

Research Questions

- What is the effect of *Familias en Acción* on grade failure?
- What is the effect of *Familias en Acción* on test scores?
- What is the effect on other outcomes that can help explain potential mechanisms?

Preview of findings

	Young		Adolescents	
	Urban	Rural	Urban	Rural
Grade failure	--	↓	--	↑
Test scores	--	↑	↓	--
Attendance	↑	↑	↑	--
Child work	↓	↓	↓	--

Familias en Acción



- Education component
 - Cash subsidy to households with children 7-17 years old conditioned on enrollment and regular attendance (80% of the time).
 - In 2002, the subsidy was \$14,000 pesos (aprox. US\$7) per child attending primary school and \$28,000 (aprox. US\$14) per child attending secondary school

Familias en Acción (cont.)

- Health and nutrition component
 - Targeted towards mothers and their children between 0 and 6 years old.
 - Cash subsidy conditioned on regular attendance to medical check-ups and vaccination programs as well as the mother's participation in health seminars



Data

- Baseline and follow-up of FA evaluation
- Quasi-experimental design
 - Treatment municipalities (*municipios*) randomly selected from stratified sample
 - Control municipalities matched based on municipality characteristics
 - Eligible households (SISBEN 1) randomly selected within each municipality

Data (cont.)

	Control	Treatment	Total
Municipalities	65	57	122
Households	4,689	6,773	11,462
Children 7-17	9,899	13,972	23,871

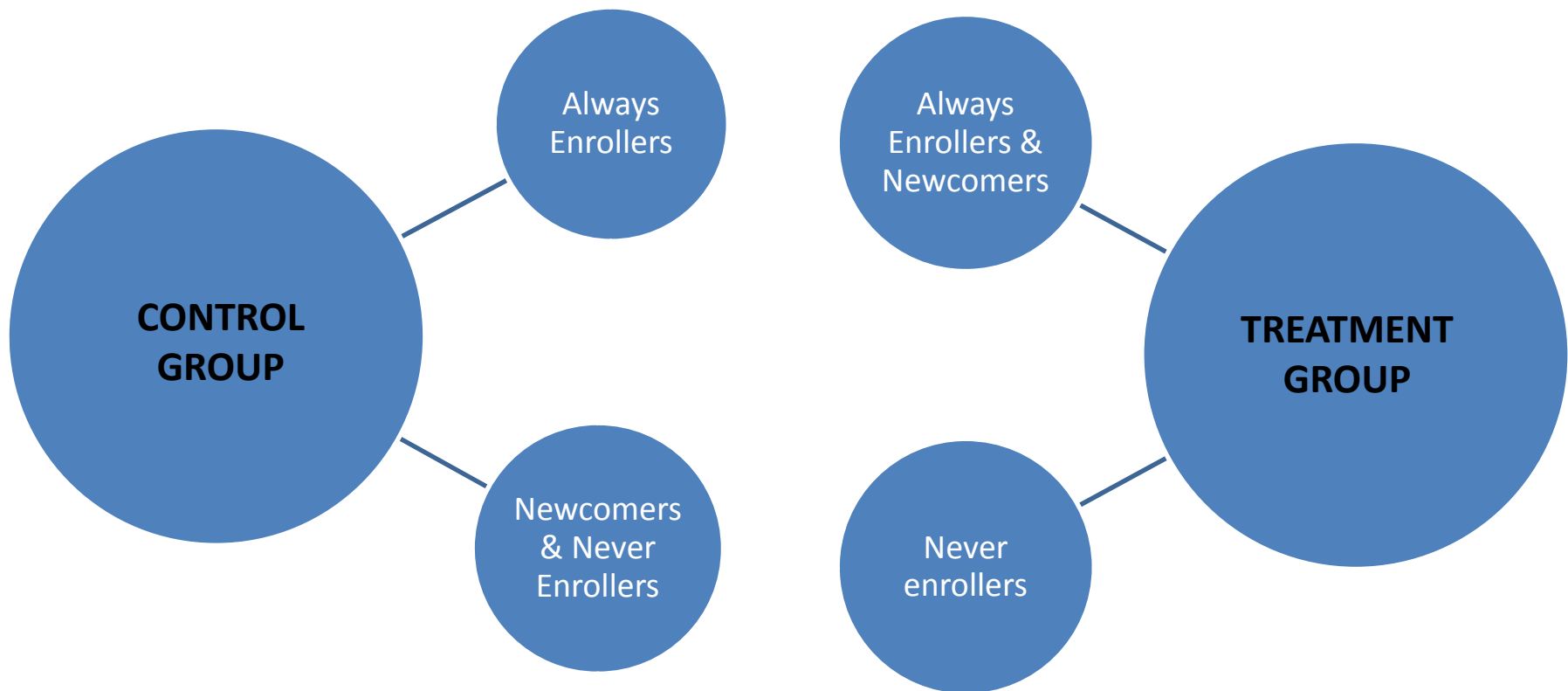
Empirical strategy

- Achievement outcomes are conditional on school enrollment
 - Problem: schools attended by treatment group subjects are likely to undergo compositional change due to increases in enrollment.
 - Thus, comparing means between control and treatment groups will not give an unbiased effect estimate.
 - Approach: match children from the treatment group only to those in the control group who did not drop out of school from baseline to the first follow-up.

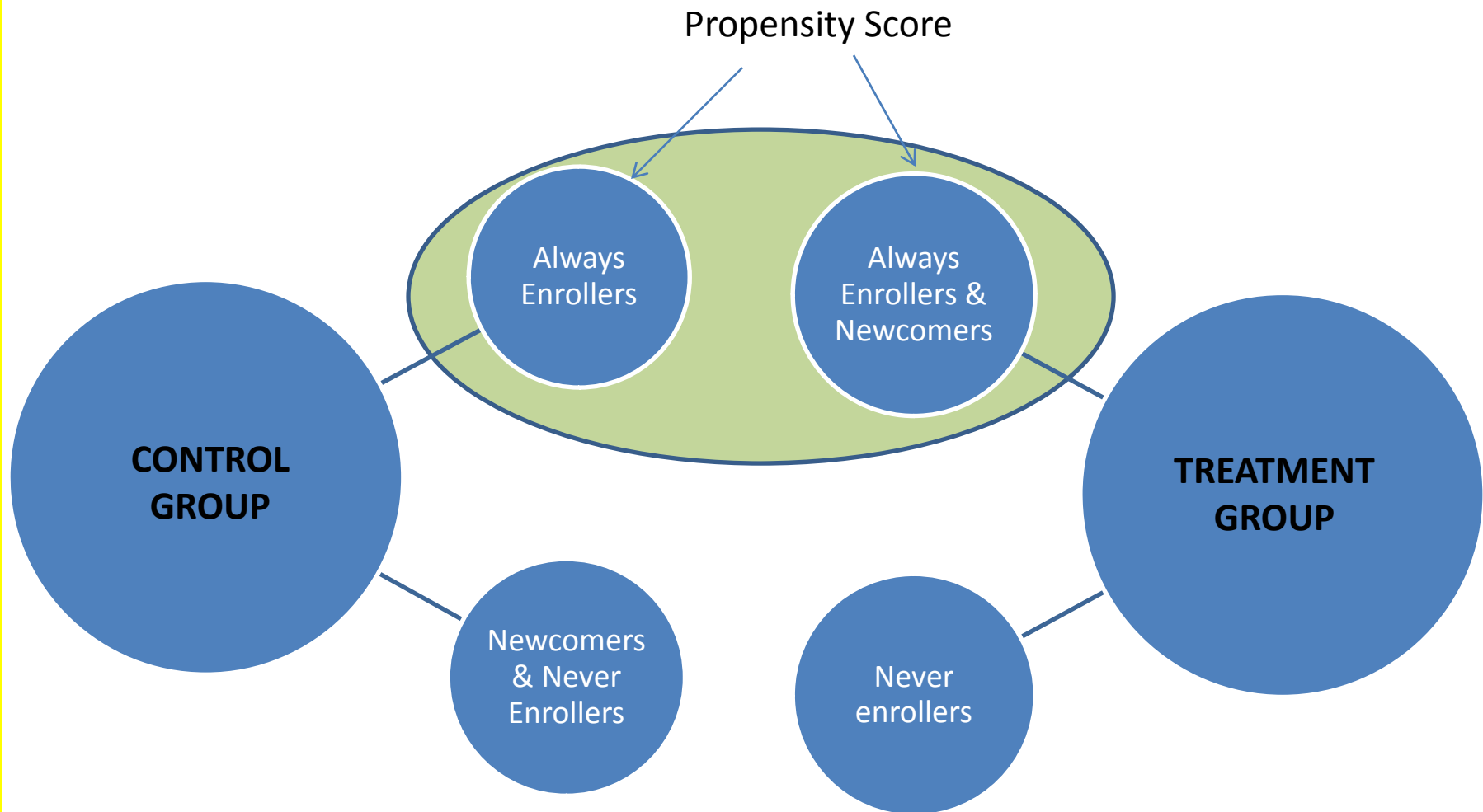
Potential enrollment outcomes

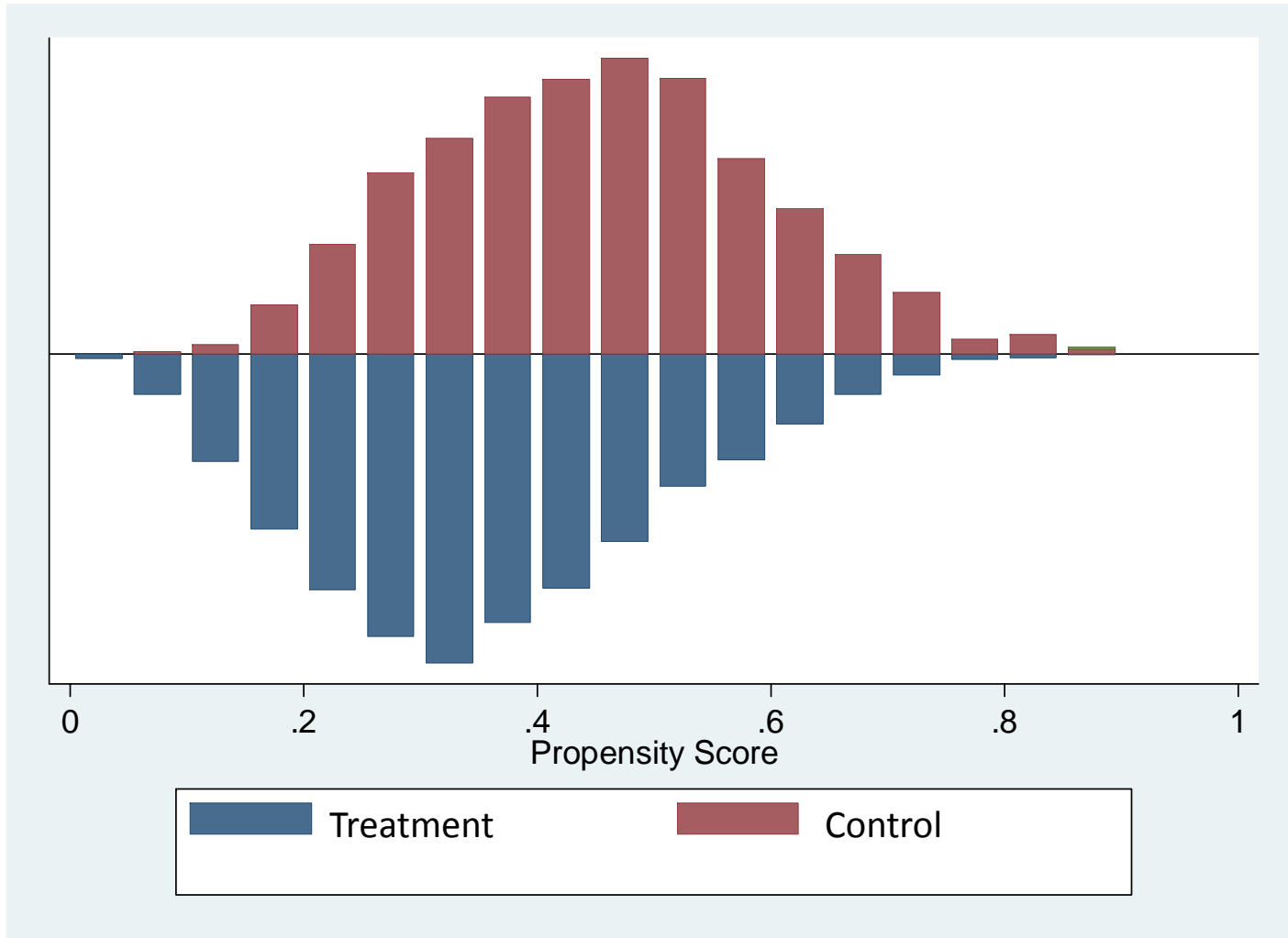
Enrollment status (D) if assigned treatment	Enrollment status (D) if assigned control	Behavioral type
$D(1)=1$	$D(0)=1$	Always Enrollers
$D(1)=1$	$D(0)=0$	Newcomers
$D(1)=0$	$D(0)=0$	Never enrollers

Matching



Matching





Average treatment effect estimates for grade failure (matched sample)

	7-12 yrs old				13-17 yrs old			
	mean	t.e.	s.e.	N	mean	t.e.	s.e.	N
Urban	.129	.000	.009	3,160	.104	.001	.004	1,279
Rural	.154	-.033	.012**	2,762	.090	.012	.005*	3,007

+ $p < 0.10$; * $p < .05$; ** $p < .01$; *** $p < .001$

**Average treatment effect estimates for *Saber* test scores
(matched sample)**

	5th grade				9th grade			
	mean	t.e.	s.e.	N	mean	t.e.	s.e.	N
Math								
Urban	50.7	1.68	2.12	144	54.1	-2.24	1.00 +	93
Rural	53.9	3.84	1.58 *	156	54.5	.51	2.47	22
Language								
Urban	56.1	-.97	1.40	144	58.4	.136	1.43	93
Rural	56.3	3.18	1.76 +	156	58.2	-1.92	3.73	19

⁺p<.10; * p<.05

Average treatment effects for possible mechanisms

	7-12 yrs old				13-17 yrs old			
	Urban		Rural		Urban		Rural	
<u>School attendance</u>								
Skipped school in the last month	-0.064	**	-0.072	***	-0.059	*	.010	
Days absent from school last month	-0.321	***	-0.695	***	-0.315	*	.059	
<u>Child time use</u>								
Worked last week	-0.002	+	-0.010	***	-0.038	***	-0.000	
Hours worked last week	-0.238		-1.20	**	-1.97	*	.370	
Hours in paid work	-0.140		-0.182	*	-0.245	+	.086	
Hours in unpaid work	-0.114		-0.448	***	-0.112		-0.079	
Hours in household work	-0.341	***	-0.379	***	-0.472	***	-0.200	+
<u>Health</u>								
Sick in the last 2 wks	-0.048	**	-0.005		.026		-0.018	
N	2,164		2,226		2,930		2,847	

+ $p < 0.10$; * $p < .05$; ** $p < .01$; *** $p < .001$

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Attendance	↑	↑	↑	--
Child work	↓	↓	↓	--
	Tired?	✓	Quality? Peers?	

Conclusions

- *Familias en Acción* is having a positive effect on school achievement for young children living in rural areas (“double success”).
- FA has practically no effect on young children living in urban areas (tiredness story?) .
- Possible negative effect in adolescents (school overcrowding? Quality of instruction? Peer effects?).
- Future research should look at the school side both in terms of changes on inputs and learning processes as a consequence of the implementation of FA.