
Building trust? Conditional cash transfers and social capital

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Introduction

- Conditional cash transfer, their social dimension and social capital
 - Anecdotes: (Mexico, Familias en Acción) no hard evidence
 - Social capital: hard to measure
 - This paper: an experiment at the inset of a CCT in an urban context.
 - A measure of social capital based on an experimental game.
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Familias en Acción (FeA)

- A conditional cash transfer started in Colombia in 2001/2 in rural areas.
 - Modeled after PROGRESA/*Oportunidades* in México
 - Also in Brazil, Argentina, Nicaragua, Ecuador, Honduras, Chile, y Jamaica.
 - FeA has become the flagship program of Colombian social policy.
 - It includes 1.5 million approx. by 2007.
 - Most of the expansion is happening in urban areas.
-

Social Capital: definition and measurement

- *Norms and social networks facilitating cooperation and collective action (Putnam, 1993)*
 - Hard to measure: proxies
 - Social preferences: trust, attitudes to cooperation
-

CCTs and Social Capital

- The program FeA has three components: Nutrition and health, Education and a **Social one:** attendance to social meetings *Encuentros de Cuidado* which
 - Creates networks and improves trust among beneficiaries
 - Promotes leadership
 - Madre Líderes, Madres titulares
 - Anecdotal evidence on the strength of FA beneficiary networks
 - Beneficiary mothers start working as “social groups” (strong identification effect with the programme)
 - additional and parallel group initiatives (productive, community work, etc.)
-

Cartagena, Familias en Acción and social capital

- Program officials think that FeA had a particularly strong effect on social capital in El Pozón.
 - 97% beneficiary mothers actively participate in the periodical meetings (*'Encuentros de cuidado'*)
 - The local program coordinator (*Enlace municipal*) is very active and has promoted a number of initiatives around the program.
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Measuring social capital: The Game



The Game

The experiment is a simple public good game in which subjects decide to invest in a 'public' or a 'private' project.



Voluntary contribution mechanism (VCM) (Marwell y Ames, 1979)

- 25 players for each session simultaneously decide about their contribution to a public good
 - One individual decision: to invest a token in
 - a public account –Cuenta de Grupo or in
 - a private account –Cuenta privada
 - Your Earnings would be:
 - If you invest in the private account: COL\$5000 (US\$2.55)
 - In addition, you win COL\$400 (US\$0.20) per each token invested in the group account
-

Examples

You invest in P, and 13 people invest in G. You win $\$5000 + (13 \times \$400) = \$10200$

You invest in G, and 13 people invest in G. You win $(13 \times \$400) = \5200

You invest in G, and 20 people invest in G. You win $(20 \times \$400) = \8000

You invest in P, and 20 people invest in G. You win $\$5000 + (20 \times \$400) = \$13000$

You invest in P, and 5 people invest in G. You win $\$5000 + (5 \times \$400) = \$7000$

You invest in G, and 5 people invest in G. You win $(5 \times \$400) = \2000



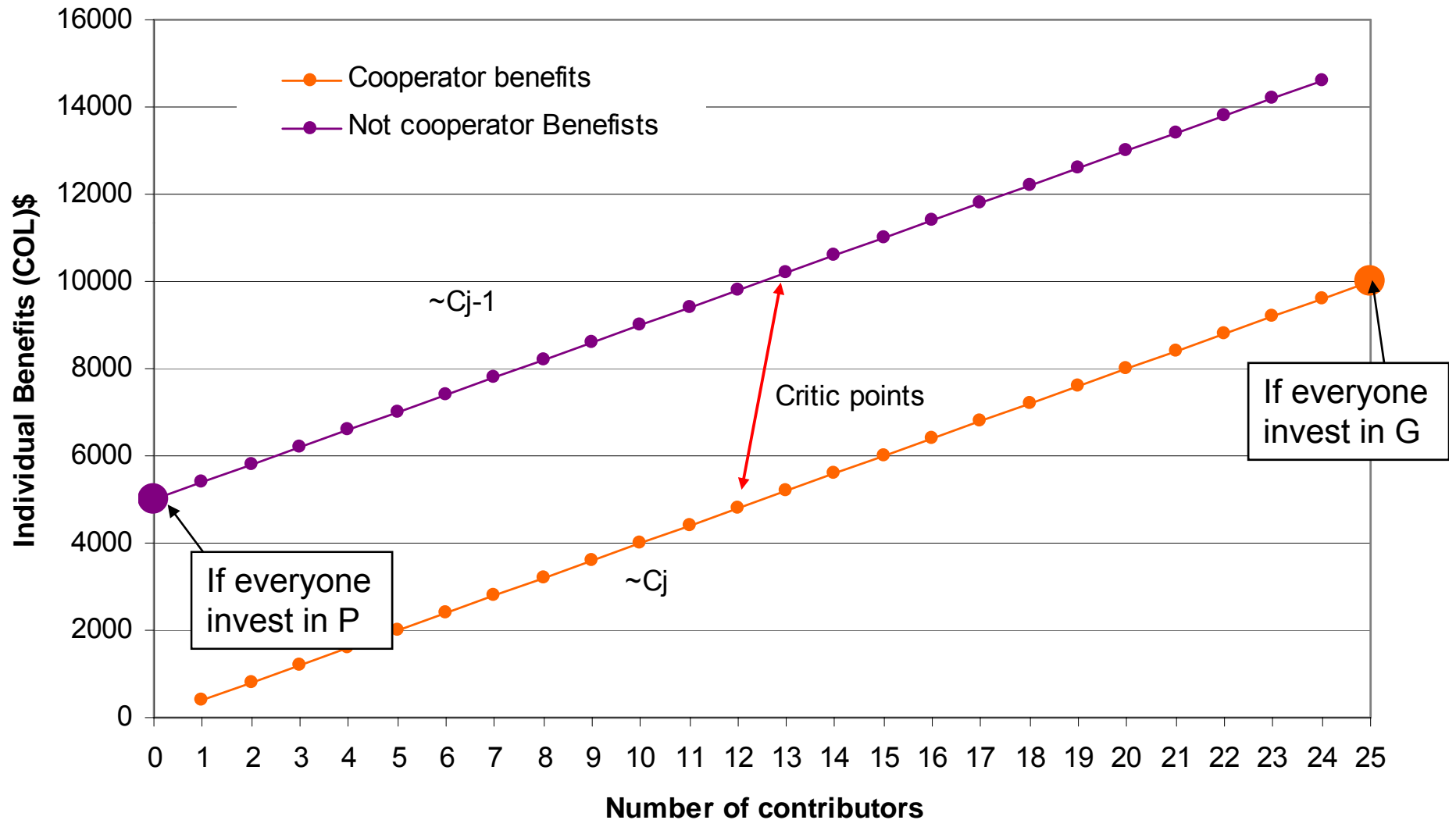
Experimental design

- If “todos ponen”
 - Maximum social efficiency per session: COL\$250000 (or 10000 per head)
 - \$400*25 tokens in G* (25 people)
- Prediction with rational and self-regarded players
 - Each player keeps her token and contributes nothing
 - Self-oriented maximizer prediction (Nash Equilibrium): COL\$125000.
 - \$5000*25 tokens in P
- The social dilemma
 - There is a conflict between the self interest and the optimum social outcome
- Two rounds with communication
- Show up fee=COL\$2000.



The basic structure of the dilemma

Not cooperating ($\sim C$) is a dominant strategy for the $(j-1)$ player



Treatment: communication



Other instruments

- We collect a survey after the game that allows to control for observable characteristics both at the individual and at the session level and to collect additional and traditional measures of social capital.
- We also collect information on pre-existing networks



Social Capital measures

- From the game
 - % contribution to the public good
 - The extent to which individuals use communication to improve on the outcome in the first round.
- From the survey
 - Trust (WVS)
 - Membership in organizations
 - Participation in political and social processes within the community.
- Who knows whom: Density of the Social network in the group
 - Friend
 - Acquaintance
 - Relative





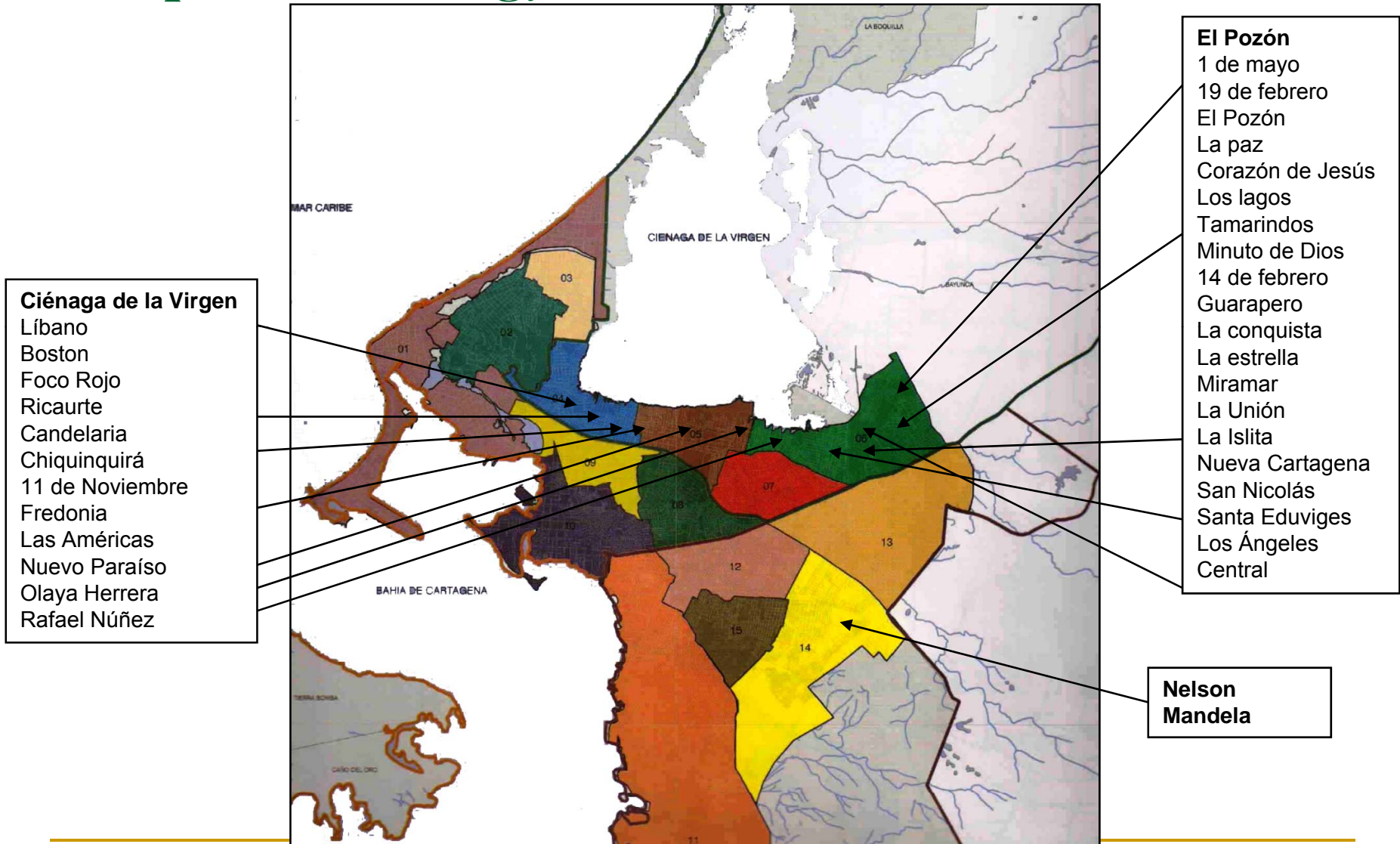
Methodology



Empirical Strategy

- In anticipation of the urban expansion FeA administration piloted the program in a few urban localities since 2005.
 - El Pozón was short-listed together with another two neighborhoods (Ciénaga de la Virgen and Nelson Mandela) as a possible location for the program.
 - Apparently El Pozón was chosen because of the consequence of a hurricane that hit that neighborhoods particularly badly.
 - After conversations with the program administrator it was felt that, ex-ante, El Pozón and Ciénaga de la Virgen were very similar.
 - In October 2007 the programme expanded in all Cartagena (including Ciénaga de la Virgen)
-

Empirical Strategy



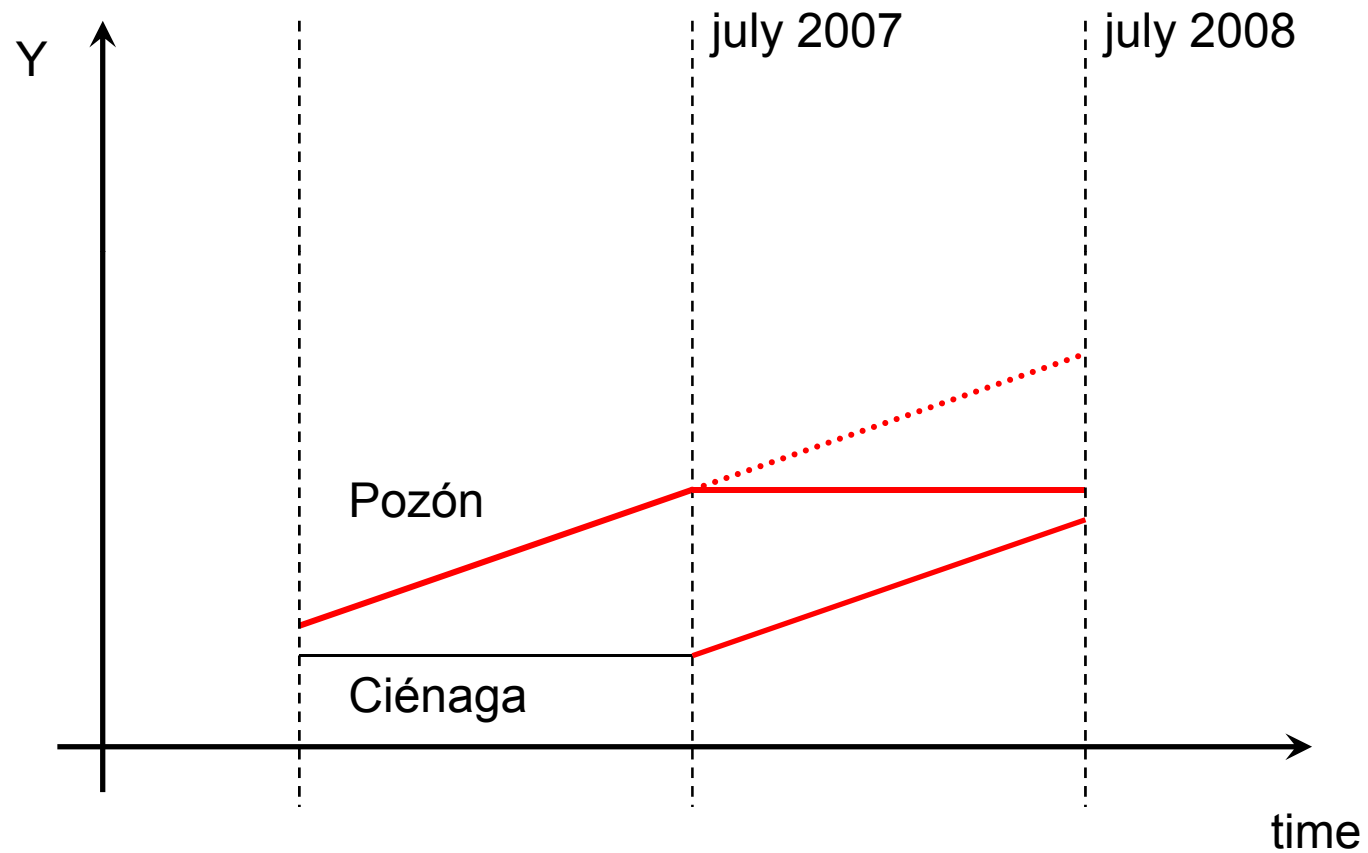
Empirical Strategy

- We measure social capital in Ciénaga and Pozón using the VCM game and the additional instruments
- Baseline: July 2007 (3 months before FA's expansion)
 - Treated Neighborhood: El Pozón
 - Control Neighborhood: Ciénaga de la Virgen
- Follow up: July 2008
 - Treated Neighborhood: El Pozón
 - Treated Neighborhood: Ciénaga de la Virgen
 - 2 strategies: panel (repeated games) and independent cross section
- Sample
 - 1,453 subjects in Total
 - 98.8% women
 - 71 sessions
 - Average session size: 24.5 people

	Number of Players (number of sessions)		
	Base Line	Follow-up	
		<i>Independent cross sections</i>	<i>Panel</i>
El Pozón	342 (14)	299 (12)	173 (7)
Ciénaga	334 (14)	320 (13)	271 (11)
Total	676 (28)	619 (25)	444 (18)

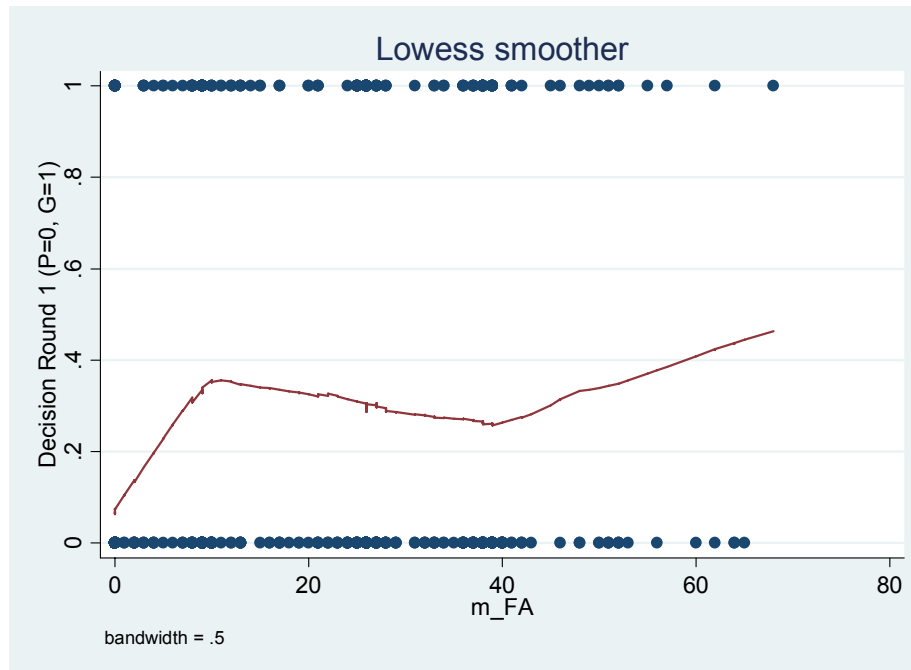
Methodology

- “Reverse” Difference in Difference



Methodology

- The method relies on a strong assumption on the functional form of cooperation along the time of exposure (increasing, marginally decreasing)
- Is this assumption credible?

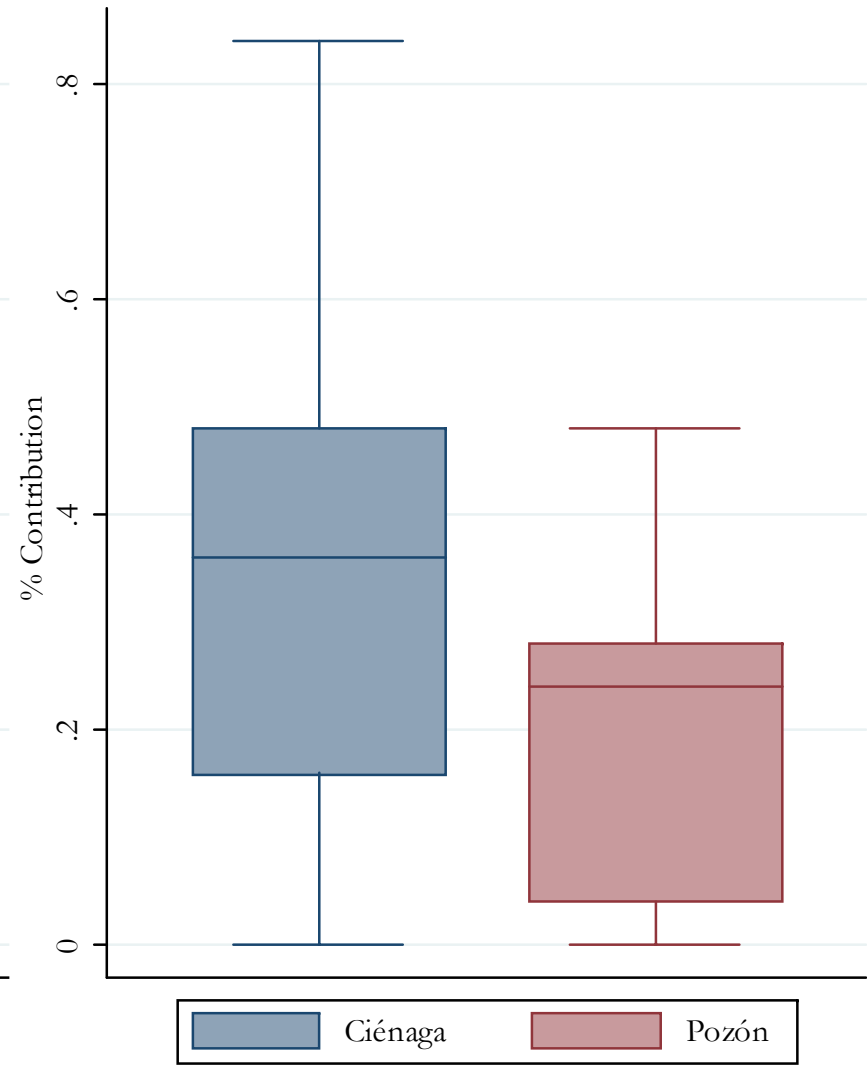
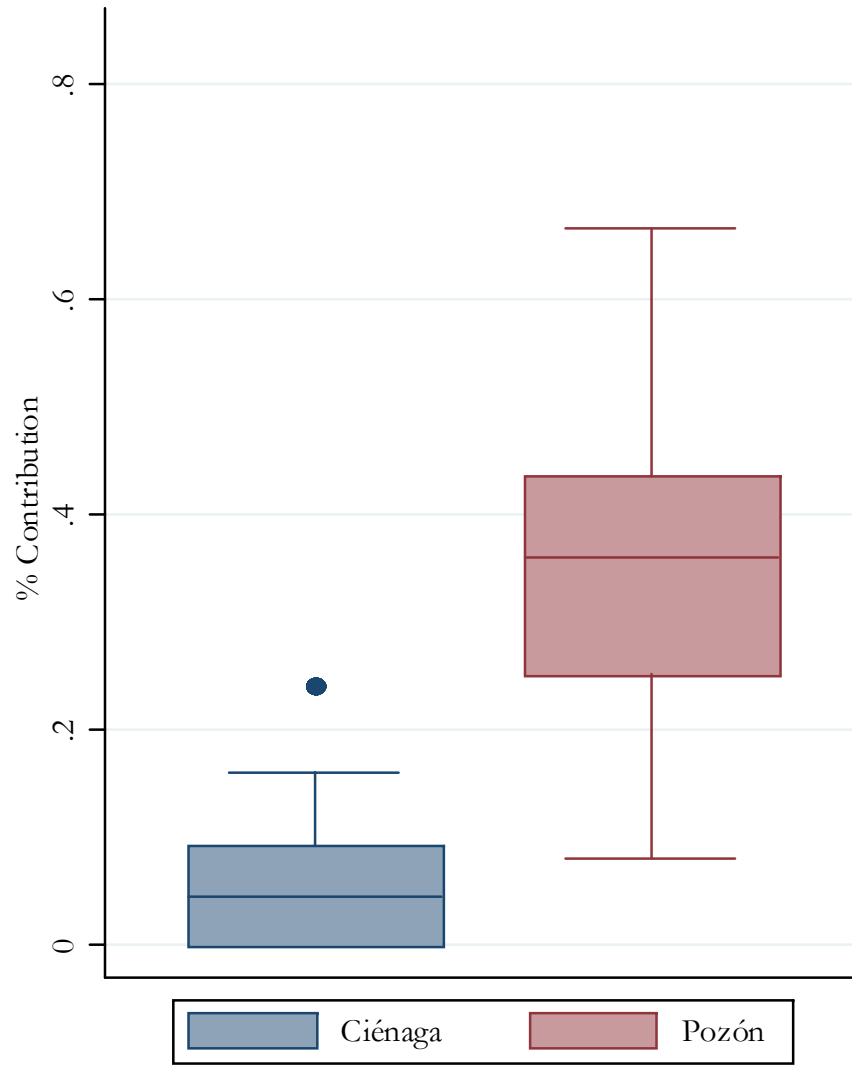


- If this is true, and FA is effective in creating social capital:
 - Pozón should show higher cooperation rates than Ciénaga in July 2007
 - The discrepancy should diminish (tending to 0) in July 2008

% Contribution in the first round per session

July 2007

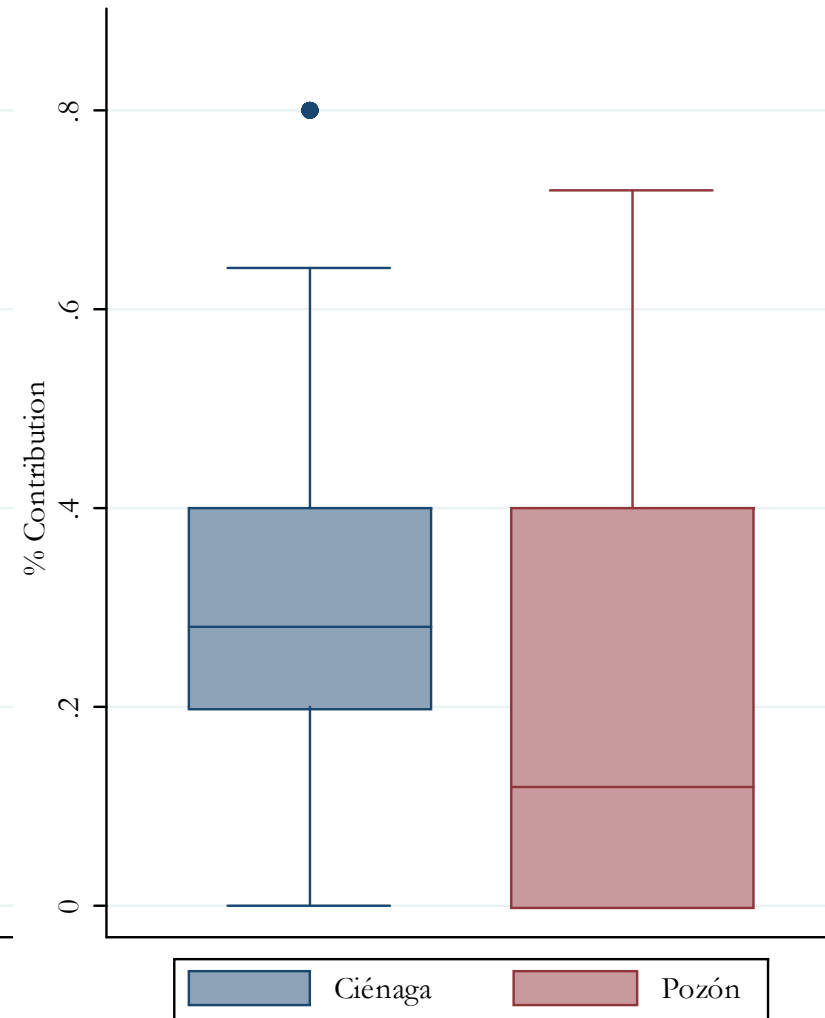
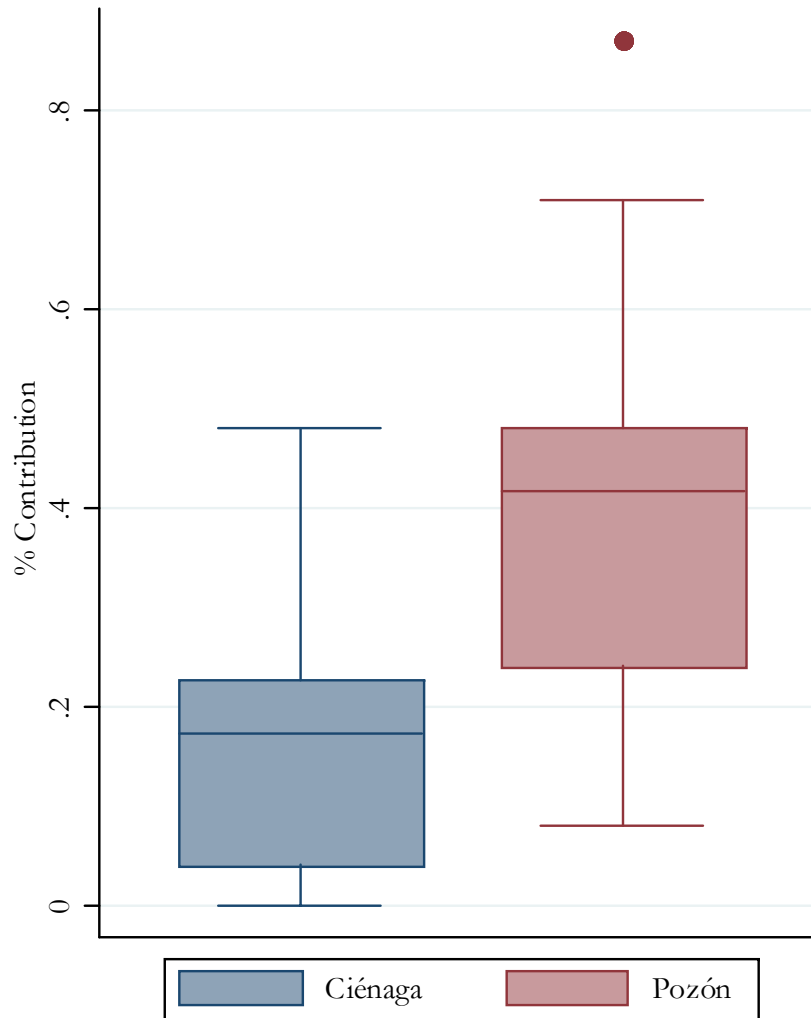
July 2008



% Contribution in the Second round per session

July 2007

July 2008



Raw Comparisons

	% contribution in G	El Pozón	Ciénaga	Total
2007	First round***	33.04	6.59	19.97
	Second round***	38.3	15.87	27.22
2008	First round***	22.08	36.25	29.4
	Second round***	23.74	31.85	27.94

* difference significant at 10%; ** significant at 5%; *** significant at 1%

Baseline Differences

- Are the 2 neighbourhoods comparable?

Variable	El Pozón	Ciénaga	Total
General Characteristics			
%Woman***	100	97.90	98.96
Age (years)***	38.04	33.56	35.83
%Head ***	21.34	30.53	25.89
%Wife or partner***	76.90	62.87	69.97
%Single***	5.56	11.68	8.58
Number of Years living in the neighborhood***	14.49	22.37	18.38
%Displaced***	19.10	8.20	13.75
Participation in <i>Familias en Acción</i>			
%Madre_lider***	16.70	-	-
Participation in <i>Encuentros de Cuidado</i>	97.06	-	-
Level of Education (%)			
None*	2.05	4.19	3.11
Primary Incomplete	18.12	18.56	18.34
Primary Complete	13.45	13.77	13.61
Secondary Incomplete**	37.43	30.24	33.88
Secondary Complete	23.98	25.45	24.70

* Difference significant at 10%; ** significant at 5%; *** significant at 1%

Baseline Differences

Variable	El Pozón	Ciénaga
Dwelling characteristics		
Number of people per room	3.22	2.88
Floor material (ground)***	24.3%	41.0%
Own housing***	82.7%	58.7%
Time spent to the nearest health center (minutes)	28.09	32.31
Public services		
Aqueduct***	94.7%	76.9%
Sewer System	64.3%	12.6%
Phone***	9.6%	26.6%
Assets		
Cell Phone***	86.3%	67.1%
Bicycle**	21.9%	14.4%
Tvcolor*	80.7%	74.6%
Washing machine***	23.7%	13.8%
Sound Player***	39.8%	25.1%
Income variables		
%Unemployed***	2.9%	10.8%
Access to credit	67.8%	66.8%
Access to formal credit	21.1%	22.2%
Food unsafety level (high)	9.6%	9.9%
Per capita Monthly Income** (COL\$)	49,364	43,550

* difference significant at 10%; ** significant at 5%; *** significant at 1%

Time Differences

- Are the independent cross sections comparable?

Variable	El Pozón			Ciénaga		
	Baseline	Follow-up		Baseline	Follow-up	
General Characteristics						
%Woman	100	98.7		97.9	97.8	
Age (years)	38.0	36.1	***	33.6	36.3	***
%Head	21.3	24.1	***	30.5	42.8	***
%Wife or partner	76.9	77.9		62.9	66.6	
%Single	5.6	10.4	***	11.7	11.8	
Number of Years living in the neighborhood	14.5	14.6		22.4	22.6	
%Displaced	19.1	16.4		8.2	11.2	
%Unemployed	2.9	4.3		10.8	5.0	***
Level of Education (%)						
None	2.0	0.0	***	4.2	0.0	***
Primary Incomplete	20.2	2.3	***	22.8	2.8	***
Primary Complete	13.5	22.4	***	13.8	21.6	***
Secondary Incomplete	37.4	15.4	***	30.2	14.7	***
Secondary Complete	28.9	59.9	***	33.2	60.9	***
Dwelling characteristics						
Floor material (ground)	24.3	30.8	*	41.0	25.9	***
Own housing	82.7	68.2		58.7	52.5	
Time spent to the nearest health center (minu	28.1	25.3		32.3	18.3	
Public services						
Aqueduct	94.7	92.0		76.9	83.4	**
Sewer System	64.3	69.2		12.6	27.5	***
Phone	9.6	8.0		26.6	24.4	

* difference significant at 10%; ** significant at 5%; *** significant at 1%

Basic results

■ Parametric “Reverse diff in diff”

$$Y_{it} = \alpha + \beta X_{it} + \gamma D_{it} + \delta T_{it} + \lambda Diff_{it} + \varepsilon_{it}$$

Programme's Impact on the Cooperative Decision (First Round)

	I	II	III	IV	V
Dummy <i>Ciénaga</i>	0.123* [0.067]	0.096 [0.064]	0.046 [0.067]	-0.008 [0.069]	-0.058 [0.078]
Dummy Time	-0.0975* [0.052]	-0.090* [0.052]	-0.095** [0.046]	0.018 [0.072]	0.108* [0.055]
Interacted (<i>Ciénaga</i> , 2007)	-0.319*** [0.048]	-0.303*** [0.049]	-0.254*** [0.058]	-0.171** [0.084]	-0.134** [0.066]
Basic Controls		YES	YES	YES	YES
Session Correlation Controls			YES	YES	YES
Experimenter Controls				YES	YES
Group Composition Controls					YES
Observations	1295	1283	1283	1282	1282

Marginal Probit. Cluster at the Session level. * significant at 10%; ** significant at 5%; *** significant at 1%

Controls

Selected Socioeconomic controls (first round).

	II	III	IV	V
Player's age	0.016** [0.008]	0.015* [0.008]	0.015* [0.008]	0.009 [0.008]
Household size	0.016*** [0.006]	0.016*** [0.006]	0.015** [0.006]	0.012* [0.006]
Ground Floor (house)	-0.045* [0.026]	-0.046* [0.026]	-0.039 [0.025]	-0.032 [0.024]
Water by Pipe	0.046 [0.037]	0.051 [0.036]	0.04 [0.036]	0.056* [0.032]
Sewage	-0.054* [0.029]	-0.055** [0.028]	-0.051* [0.028]	-0.032 [0.027]
No Electricity	0.158** [0.080]	0.154* [0.080]	0.131 [0.081]	0.105 [0.083]
Other programme support	-0.056* [0.031]	-0.05 [0.032]	-0.045 [0.032]	-0.041 [0.030]
Observations	1283	1283	1282	1282

Marginal Probit. Cluster at the Session level. * significant at 10%; ** significant at 5%; *** significant at 1%

Controls

Experimenter, Session Correlation and Group Heterogeneity Controls (first round).

		III	IV	V
Session Correlation Controls	First Session in the Day	0.121** [0.056]	0.166*** [0.061]	0.216*** [0.042]
	Deviation from the Mean of Previous 2 Sessions	0.411** [0.205]	0.391* [0.217]	0.247 [0.153]
Experimenter Controls	Player did not understand the instructions		-0.039* [0.020]	-0.041** [0.020]
	Experimenter n°1 (2008)		-0.101* [0.060]	-0.103** [0.049]
	Experimenter n°2 (2007)		-0.015 [0.074]	0.048 [0.058]
	Experimenter n°3 (2007)		0.095 [0.071]	0.095** [0.048]
Group Conformation Controls	Session size			-0.047*** [0.009]
	At least one Man in the Group			0.129** [0.055]
	Average Education in the Group			0.01 [0.008]
	S.D. of Education in the Group			-0.018 [0.011]
	Average Age in the Group			-0.074 [0.055]
	S.D. of Age in the Group			-0.382*** [0.138]
	Average Years in the Neighbourhood in the Group			0.023*** [0.009]
	S.D. of Years in the Neighbourhood in the Group			-0.048*** [0.011]
	Observations		1283	1282

Marginal Probit. Cluster at the Session level. * significant at 10%; ** significant at 5%; *** significant at 1%

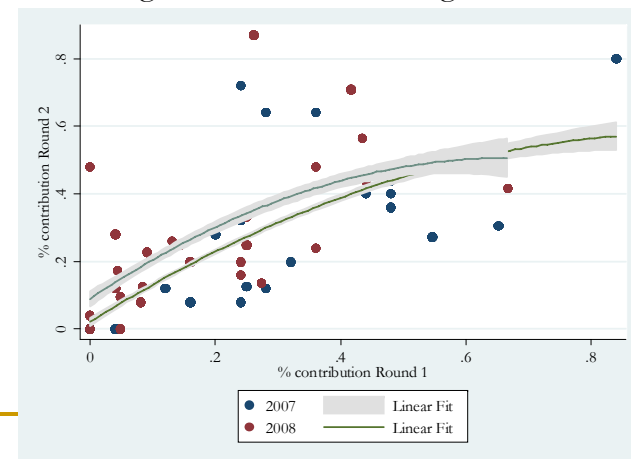
Further Results

Programme's Impact on the Cooperative Decision (Second Round)

	I	II	III	IV	V
Dummy <i>Ciénaga</i>	0.08 [0.092]	0.028 [0.087]	-0.002 [0.088]	-0.147 [0.124]	-0.138 [0.115]
Dummy Time	-0.136 [0.086]	-0.122 [0.084]	-0.126 [0.082]	-0.195* [0.114]	-0.217* [0.113]
Interacted (<i>Ciénaga</i> , 2007)	-0.261*** [0.077]	-0.241*** [0.079]	-0.202** [0.091]	-0.182 [0.116]	-0.123 [0.122]
Basic Controls		YES	YES	YES	YES
Session Correlation Controls			YES	YES	YES
Group Composition Controls				YES	YES
Cooperation in Round 1					YES
Observations	1295	1283	1283	1283	1283

Marginal Probit. Cluster at the Session level. * significant at 10%; ** significant at 5%; *** significant at

The decisions in Rounds 1 and 2 are positively correlated



The role of the *Madres Líderes*

El papel de las *Madres Líderes* (First Round, treatment only)

	II	III	IV	V
<i>Madre Líder</i>	-0.102** [0.049]	-0.103** [0.049]	-0.103** [0.049]	-0.099** [0.049]
Proportion of <i>Madres Líderes</i> in the Group	0.713** [0.334]	0.554* [0.290]	0.951** [0.472]	0.801* [0.424]
At least a <i>Madre Líder</i> in the Group	0.226*** [0.055]	0.207*** [0.060]	0.234*** [0.043]	0.235*** [0.033]
Basic Controls	YES	YES	YES	YES
Session Correlation Controls		YES	YES	YES
Experimenter Controls			YES	YES
Group Composition Controls				YES
Observations	958	958	958	958

Marginal Probit. Cluster at the Session level. * significant at 10%; ** significant at 5%; *** significant at 1%

- We find analogous results in the Second Round (even when controlling for 1st round decision)

Cooperation, Communication and Connectivity

Networks and Cooperation in the Second Round

	II	III	IV	V
Group Average Connectivity Index	0.639*** [0.237]	0.656*** [0.241]	0.843*** [0.242]	0.797*** [0.234]
Basic Controls	YES	YES	YES	YES
Session Correlation Controls		YES	YES	YES
Group Composition Controls			YES	YES
First Round Decision				YES
Observations	1283	1283	1283	1283

Marginal Probit. Cluster at the Session level. * significant at 10%; ** significant at 5%; *** significant at 1%

- Evidence suggests that the FA may be increasing the connectivity measures.

Conclusions

- We have presented some evidence on the effect of *Familias en Acción* , a conditional cash transfer program, on 'social capital'.
 - We introduce a specific measure of social capital, as the outcome of a controlled game.
 - We find evidence that in the specific context urban context we considered, *FeA* seem to have had a strong effect on social capital
 - Key issues:
 - The importance of group composition and connectivity
 - The role of *Madres Lideres*
 - Some caveats are in order:
 - *Strong assumption on the functional form of cooperation along exposure.*
 - *External validity of the results outside Cartagena (the results are different in rural areas).*
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¡Gracias!
