

Online Appendix

Voter Response to Peak and End Transfers: Evidence from a Conditional
Cash Transfer Experiment

Sebastian Galiani

Nadya Hajj

Patrick J. McEwan

Pablo Ibararán

Nandita Krishnaswamy

Appendix A: Village and Household Targeting of Bono 10,000

The 2011-2012 Demographic and Health Survey (DHS) was collected between September 2011 and July 2013, overlapping with the national rollout of Bono 10,000. Overall, 16% of sampled households reported that they had received at least one Bono 10,000 payment (12% if weighted to account for survey design). We can empirically assess whether the receipt of Bono 10,000 is correlated with village and household targeting criteria. Table A1 reports the sample descriptive statistics, while Table A2 regresses household participation on variables that proxy the eligibility criteria.

An increase of 21 percentage points in the extreme poverty rate of a household's village—about one standard deviation—increases the probability of participation by 5 percentage points (or 31%).¹ Rural households are 10 percentage points (or 63%) more likely to participate. Income and wealth proxies are correlated with participation, but only when they were used in the proxy means test. For example, households with fewer assets are more likely to participate, but the schooling of the household head is weakly associated. Lastly, participation is associated with the presence of children in the household. We would expect the relationship between household structure and participation to be stronger when children reside in poorer villages that were targeted earlier by PRAF. Indeed, the partial correlation is stronger when households reside in relatively poorer villages.

The results suggest that PRAF adhered to stated criteria in targeting villages and households. It may yet be the case that villages were favored because they included core supporters of the incumbent National Party or because they were closely contested in a previous election. Following Schady (2000), we measured the former with municipal-level vote share of the incumbent National Party in the 2009 presidential election. We measured the latter with the absolute difference between this vote share (from 0 to 100) and 50. Coefficients on both variables are small and not statistically distinguishable from zero.

Reference

Schady, Norbert R. 2000. "The Political Economy of Expenditures by the Peruvian Social Fund (FONCODES)." *American Political Science Review* 94(2): 289-304.

¹ Village-level poverty rates are based on an official poverty map; they were utilized by PRAF personnel to select villages during the rollout of Bono 10,000. We merged poverty rates to the DHS survey using the latitude and longitude of DHS census segments—the primary sampling unit—in which households are located. The GPS coordinates were perturbed with a randomly chosen angle and radius (imposing a maximum radius depending on whether it is an urban or rural segment). Given this, we created a circular buffer around each census segment point and identified the proportion of a given circle falling into one or more villages. We estimated a household's value of a village-level variable as the average across all villages falling within the circle, weighted by the area of each village inside the buffer. We followed a similar procedure for municipal-level voting outcomes in 2009.

Table A1: Descriptive Statistics on Households in the 2011-2012 Demographic and Health Survey

Variable	Mean (standard deviation)		
	Full sample	Received Bono	Did not receive Bono
Household received Bono 10,000 transfer by survey date	0.16	1.00	0.00
Extreme poverty rate of household's village	0.48	0.62	0.46
Dwelling located in rural census segment	0.58	0.91	0.52
Dwelling has dirt floor	0.22	0.42	0.18
Dwelling connected to sewer or septic	0.49	0.22	0.54
Index of 15 household assets (z-score)	0.00	-0.57	0.11
Years of schooling (household head)	(1.00) 5.10	(0.74) 3.30	(1.00) 5.44
Number of household members	(4.37) 4.70	(2.97) 5.96	(4.51) 4.46
≥1 child between 0 and 5 years old	(2.36) 0.50	(2.31) 0.49	(2.29) 0.50
≥1 child between 6 and 18 years old	0.46	0.30	0.65
Anyone pregnant in household	0.06	0.07	0.06
National Party vote share in 2009 (municipal-level)	56.44	57.51	56.24
Absolute deviation from 50 of National Party vote share (municipal level)	7.30 7.32	8.17 8.18	7.14 7.15
N of households	(5.75) 20,446	(6.65) 3,265	(5.54) 17,181

Source: 2011-2012 Demographic and Health Survey.

Table A2: Correlates of Household Participation in Bono 10,000

	Dependent variable: Household had received any transfer at time of DHS survey		
	All households	Village extreme poverty rate < 50%	Village extreme poverty rate ≥ 50%
Extreme poverty rate of household's village	0.252*** (0.024)	0.102** (0.048)	0.421*** (0.083)
Dwelling located in rural census segment	0.099*** (0.010)	0.034*** (0.011)	0.197*** (0.016)
Dwelling has dirt floor	0.036*** (0.010)	0.014 (0.013)	0.024* (0.012)
Dwelling connected to sewer or septic	-0.019** (0.008)	-0.015* (0.009)	-0.022* (0.013)
Index of 15 household assets (z-score)	-0.032*** (0.004)	-0.016*** (0.005)	-0.029*** (0.007)
Years of schooling (household head)	0.001** (0.001)	-0.001* (0.001)	0.002** (0.001)
Number of household members	0.020*** (0.002)	0.008*** (0.002)	0.024*** (0.003)
≥1 child between 0 and 5 years old	0.012** (0.006)	0.010* (0.006)	0.022** (0.009)
≥1 child between 6 and 18 years old	0.079*** (0.007)	0.031*** (0.007)	0.148*** (0.011)
Anyone pregnant in household	-0.019* (0.011)	-0.013 (0.010)	-0.025 (0.017)
National Party vote share in 2009 (municipal-level)	0.000 (0.002)	-0.001 (0.001)	0.001 (0.003)
Absolute deviation from 50 of National Party vote share (municipal-level)	0.001 (0.002)	0.001 (0.002)	-0.003 (0.003)
R^2	0.18	0.05	0.19
N	20,446	10,230	10,216

Source: 2011-2012 Demographic and Health Survey.

Notes: *** indicates statistical significance at 1%, ** at 5%, and * at 10%. Robust standard errors, clustered by census segments (the primary sampling unit), are in parentheses. All regressions include a constant and dummy variables indicating year-by-month cells in which the survey was completed.

Appendix B: Baseline Balance

Table B1: Baseline Characteristics of Villages in the Restricted Estimation Sample

	Mean (standard deviation)			p-value (jointly equal)	p-value (K-S)
	CCT1	CCT2	CCT3		
<u>Panel A: Village-level vote share in 2009 Presidential elections</u>					
National Party vote share	56.29 (15.65)	58.42 (14.59)	57.81 (15.18)	0.67	0.55/0.42
Liberal Party vote share	39.83 (15.84)	38.23 (14.24)	39.13 (14.95)	0.81	0.97/0.83
<u>Panel B: Village-level variables from 2001 census; individuals 18 and older</u>					
% female	0.486 (0.03)	0.489 (0.04)	0.491 (0.04)	0.48	0.83/0.37
Mean age	37.99 (1.94)	38.03 (1.78)	38.23 (2.21)	0.58	0.55/0.79
% Lenca (indigenous)	0.0765 (0.17)	0.078 (0.17)	0.091 (0.18)	0.75	0.63/0.48
Mean years of schooling	2.922 (0.75)	3.05 (0.75)	3.01 (0.63)	0.56	0.48/0.95
% literate	0.65 (0.10)	0.663 (0.09)	0.664 (0.09)	0.59	0.75/0.90
% who worked week before census	0.505 (0.08)	0.498 (0.09)	0.501 (0.09)	0.85	0.22/0.72
% with dirt floor in dwelling	0.573 (0.18)	0.563 (0.20)	0.558 (0.20)	0.82	0.89/0.99
% with piped water in dwelling	0.712 (0.23)	0.741 (0.24)	0.712 (0.21)	0.65	0.95/0.03
% with electric light in dwelling	0.212 (0.24)	0.212 (0.22)	0.208 (0.23)	0.99	0.94/0.24
% with sewer/septic in dwelling	0.304 (0.22)	0.332 (0.21)	0.327 (0.23)	0.39	0.77/0.90
N of villages	76	69	237		

Notes: Each cell in the column titled “p-value (jointly equal)” reports the p-value from an F-test of the null hypothesis that the means in the three groups are equal. Each cell in the column titled “p-values (K-S)” reports p-values from two-sample Kolmogorov-Smirnov tests of the equality of distributions of the baseline variables (across CCT1/CCT3 and CCT2/CCT3, respectively).

Appendix C: Alternate Interpretations

Table C1: Heterogeneous Effects on Turnout and Incumbent Party Vote Share in 2013 Presidential Election

	Turnout	National Party share
<u>Panel A: Main sample of villages</u>		
CCT1	2.51** (1.13)	2.46*** (0.93)
CCT1 × Z	0.33 (0.98)	1.79** (0.76)
CCT2	2.32** (1.07)	1.86** (0.81)
CCT2 × Z	0.03 (0.53)	0.38 (0.46)
Adjusted R ²	0.21	0.45
N of villages	676	676
<u>Panel B: Restricted sample of villages</u>		
CCT1	2.23* (1.31)	2.33** (1.06)
CCT1 × Z	0.91 (1.15)	2.23*** (0.85)
CCT2	2.52* (1.33)	2.83** (1.21)
CCT2 × Z	-0.07 (0.79)	0.33 (0.75)
Adjusted R ²	0.27	0.47
N of villages	382	382

Notes: *** indicates statistical significance at 1%, ** at 5%, and * at 10%. Robust standard errors are in parentheses. See the note to Table 1 for definitions of the main and restricted samples. Z is the z-score (within each estimation sample) of the number of registered voters. All regressions include a constant, the control variables in Table 2, and the main effect of Z.

Table C2: Benefits Available to Households in the Year Prior to the Follow-Up Survey

	Percentage of households in:		p-value
	CCT1	CCT2	
<u>In the 12 months prior to follow-up survey, any member of household received...</u>			
Bono 10,000	79.5%	3.9%	<0.01
Other government transfer:			
Mother-child transfer	1.0%	0.1%	<0.01
Old-age transfer	1.7%	1.5%	0.76
Agriculture transfer	0.9%	0.8%	0.96
Secondary school transportation transfer	0.1%	0.2%	0.17
Assistance to female-managed businesses	0.1%	0.2%	0.30
<u>In the 12 months prior to follow-up survey, any member of household benefitted from...</u>			
School lunch	72.9%	68.2%	0.01
Food donation	3.5%	4.2%	0.41
Literacy campaign	1.4%	1.1%	0.40
Health or vaccination campaign	27.4%	32.4%	0.01
Growth monitoring for young children	6.1%	6.1%	0.99
Training in health	2.2%	2.5%	0.69
Latrine project	2.7%	2.4%	0.79
Potable water project	2.5%	2.8%	0.78
Sewer project	0.1%	0.4%	0.17
Electricity project	3.2%	1.5%	0.02
Construction or improvement of dwelling	3.0%	2.0%	0.16
Support for farmers	1.9%	1.5%	0.46
Support for small business owners	0.4%	0.3%	0.75
N of households in follow-up survey	1875	1797	

Note: The sample includes all households with non-missing follow-up surveys in CCT1 and CCT2. Each p-value corresponds to the test of the null hypothesis that percentages are equal (adjusting for clustering of households within villages).

Table C3: Effects on Voter Registration in the 2013 Presidential Election

	Dependent variable: Z-score of the number of registered voters	
<u>Panel A: Main sample of villages</u>		
CCT1	-0.022 (0.086)	0.005 (0.077)
CCT2	0.062 (0.116)	0.003 (0.103)
Adjusted R ²	<0.01	0.20
N of villages	676	676
p-value (CCT1=CCT2)	0.51	0.98
<u>Panel B: Restricted sample of villages</u>		
CCT1	0.039 (0.129)	0.015 (0.115)
CCT2	0.015 (0.153)	-0.034 (0.145)
Adjusted R ²	<0.01	0.16
N of villages	382	382
p-value (CCT1=CCT2)	0.89	0.75
Control variables?	N	Y

Note: *** indicates statistical significance at 1%, ** at 5%, and * at 10%. Robust standard errors are in parentheses. See the note to Table 1 for definitions of the main and restricted samples. All regressions include a constant; additional controls in one specification include the variables in Table 2.

Appendix D: The PRAF-II Experiment

Table D1: Baseline Characteristics of Municipalities in PRAF-II sample

	Mean (standard deviation)		p-value (equal)	p-value (K-S)
	CCT	Control		
<u>Panel A: Municipal-level vote share in 1997 Presidential elections</u>				
National Party vote share	49.33 (8.44)	49.45 (9.23)	0.96	0.88
Liberal Party vote share	45.7 (7.76)	45.58 (9.30)	0.95	0.78
<u>Panel B: Municipal-level variables from 2001 census; individuals 18 and older</u>				
% female	0.496 (0.02)	0.495 (0.02)	0.84	0.88
Mean age	37.37 (1.33)	37.58 (1.43)	0.52	0.5
% Lenca (indigenous)	0.29 (0.22)	0.278 (0.26)	0.84	0.73
Mean years of schooling	2.816 (0.73)	2.69 (0.59)	0.43	0.97
% literate	0.63 (0.09)	0.618 (0.08)	0.56	0.5
% who worked week before census	0.51 (0.06)	0.525 (0.04)	0.22	0.15
% with dirt floor in dwelling	0.71 (0.17)	0.662 (0.19)	0.27	0.4
% with piped water in dwelling	0.653 (0.11)	0.66 (0.17)	0.86	0.15
% with electric light in dwelling	0.171 (0.15)	0.182 (0.17)	0.79	0.92
% with sewer/septic in dwelling	0.341 (0.13)	0.285 (0.14)	0.09	0.27
N of municipalities	40	30		

Notes: Each cell in the column titled “p-value (equal)” reports the p-value from an F-test of the null hypothesis that the means in the three groups—are equal (conditional on dummy variables indicating 4 of 5 strata). Each cell in the column titled “p-value (K-S)” reports the p-value from a two-sample Kolmogorov-Smirnov test of the equality of distributions of the baseline variables.

Table D2: Effects of PRAF-II on the 2001 Presidential Election

	Dependent variable: Turnout		Dependent variable: Liberal vote share		Dependent variable: National vote share	
CCT	-1.41 (1.46)	-1.05 (1.49)	-0.72 (1.43)	-0.26 (1.09)	-0.53 (1.22)	-0.10 (0.93)
Adjusted R ²	0.03	0.08	<0.01	0.54	0.15	0.63
N of municipalities	70	70	70	70	70	70
Control-group mean	74.0	74.0	33.0	33.0	38.0	38.0
Control variables?	N	Y	N	Y	N	Y

Note: *** indicates statistical significance at 1%, ** at 5%, and * at 10%. Robust standard errors are in parentheses. All regressions include a constant and dummy variables indicating 4 of 5 experimental strata (Galiani and McEwan, 2013). Additional controls in some specifications include the variables in Table D1.