Readme file for the replication of Gonzales, Mariella, Gianmarco Leon-Ciliotta and Luis Martinez (2020) "How Effective Are Monetary Incentives to Vote? Evidence from a Nationwide Policy"

Codes for data analysis are provided as part of the replication package.

Dataset list

All datasets are provided.

Data file	Notes
Data/Elections.dta	Contains data used to generate Tables 1-4, Appendix Tables A1, B1-B5, C1, C3, D1-D5, F1-F2, Figures 1-4, 6, Appendix Figures A1, B1-B3. Code found in "Replication_elect.do"
Data/FigureA2.dta	Contains data used to generate Figure A2 in the paper. Code found in "Replication_elect.do"
Data/Table5.dta	Contains data used to generate Table 5 in the paper. Code found in "Replication_elect.do"
Data/TableC2.dta	Contains data used to generate Table C2 in the paper. Code found in "Replication_elect.do"
Data/elecciones_2016full.dta	Contains data used to generate Table 6 and Figure 7, Appendix Figures G1-G3. Code found in "Replication_senior.do"
Data/chile.dta	Contains data used to generate Figures 7, G2, and G3. Code found in "Replication_senior.do"
Data/google_trends.dta	Contains data used to generate Figures 5 and E1 in the paper. Code found in "Replication_google.do"

Variables in datasets

Here is a list of the principal variables used in the analysis along with their corresponding data sources

Datafile: Data/Elections.dta

Variable name	Definition	Primary source
ubigeo	Unique numerical ID for each district	ONPE
province_id	Unique numerical ID for each province	ONPE
region	Unique numerical ID for each region	ONPE
date	Election date	ONPE
runoff	Indicator if Run-Off	ONPE
year	Year	ONPE
Id	Unique ID (date province_id category_06)	ONPE
category_06	Poverty category in 2006: 1=NP,2=P, 3=PE	JNE

category_10	Poverty category after 2010: 1=NP,2=P, 3=PE	JNE
category_0610	Numerical ID for each combination of categories in '06 and '10	ONPE
electores_01	Registered Voters for 2001 presidential election	ONPE
electores	Registered Voters	ONPE
ln_electores	Natural log of Registered Voters	ONPE
votos_emitidos	Votes	ONPE
ln_votos_emitidos	Natural log of Votes	ONPE
turnout	Turnout	ONPE
ln_turnout	Natural log of Turnout	ONPE
fine_a	Fine value (S/ x 100)	JNE
ln_fine	Natural log of Fine value	JNE
fine_r2	Fine value x D(Run-Off)	JNE
fine_2016	Fine value x D(2016)	JNE
fine_r1_11	Fine value x D(2011) x D(General)	JNE
fine_r2_11	Fine value x D(2011) x D(Run-Off)	JNE
fine_r1_16	Fine value x D(2016) x D(General)	JNE
fine_r2_16	Fine value x D(2016) x D(Run-Off)	JNE
lfine_r1_11	Natural log of Fine value x D(2011) x D(General)	JNE
lfine_r2_11	Natural log of Fine value x D(2011) x D(Run-Off)	JNE
lfine_r1_16	Natural log of Fine value x D(2016) x D(General)	JNE
lfine_r2_16	Natural log of Fine value x D(2016) x D(Run-Off)	JNE
lfine_r2	Natural log of Fine value x D(Run-Off)	JNE
lfine_2016	Natural log of Fine value x D(2016)	JNE
fine_age_avg	Fine Value x Avg Age in 2016	JNE/ONPE
ln_fine_age_avg	Natural log of Fine Value x Avg Age in 2016	JNE/ONPE
fine_age_mid	Fine Value x D(Average age: second tercile)	JNE/ONPE
fine_age_high	Fine Value x D(Average age: second tercile)	JNE/ONPE
ln_fine_age_mid	Natural log of Fine Value x Avg Age in 2016	JNE/ONPE
ln_fine_age_high	Natural log of Fine Value x D(Average age: top tercile)	JNE/ONPE
vs_runoff	Vote share of run-off candidates	ONPE
fine_poor_a	Fine value x Share Non-Extreme Poor	JNE/INEI
fine_extreme_poor_a	Fine value x Share Extreme Poor	JNE/INEI
fine_no_poor_a	Fine value x Share Non-Poor	JNE/INEI
born_district	Share born in district	ENAHO
chg_dni_2016_prepost	Change in the share of respondents that have a DNI between the post-reform years (post-2010) and the pre-reform years x D(2016)	ENAHO
ln_entre_18_20	Natural log of number of voters 18-20 years old	JNE

ln_entre_21_29	Natural log of number of voters 21-29 years old	JNE
ln_entre_30_35	Natural log of number of voters 30-35 years old	JNE
ln_entre_36_50	Natural log of number of voters 36-50 years old	JNE
ln_entre_51_75	Natural log of number of voters 51-75 years old	JNE
ln_mayores_75	Natural log of number of voters older than 75 years old	JNE
min_wage_day	Daily minimum wage in current S/ (source:Wiki)	Wikipedia
settled	Share of settled fines	JNE
target_2016	Indicator if Targeted Districts by the fine collections unit	JNE
provcap	Indicator if district is a province capital	JNE
provcap_2016	Indicator if district is a province capital x D(2016)	JNE
chg_set_2016	D(2016) x change share settled fines 06-14	JNE
share_primaria	Share of voters with primary education	ONPE
share_sec	Share of voters with secondary education	ONPE
share_univ	Share of voters with tertiary education	ONPE
extreme	Share Extreme Poor	INEI
non_extreme	Share Non-Extreme Poor	INEI
fine_any_poor	Fine value x Share Poor	JNE /INEI
ln_local	Natural log of polling stations	ONPE
lfine_any_poor	Natural log of Fine value x Share Poor	JNE/INEI
fine_vs	Fine Value x Vote share of run-off candidates	JNE/ONPE
spoiled_elec	Share of Spoiled Votes	ONPE
lndn	Natural log of Lights DN	NOAA DMSP-OLS images
chg_dni_2011_prepost	Change Share with DNI x D(2011)	ENAHO
vs_winner	Vote Share of Winner candidate	ONPE
vs_runner	Vote Share of Runner-up candidate	ONPE
vs_2candidates	Sum of Vote Shares of Top 2 Candidates	ONPE
lfine_neigh_min	Natural log of Fine value x Distance to district with lower fine	JNE / 2015 municipality-level shapefile
lfine_dum_5	Natural log of Fine value x D(Distance to district with lower fine: 0-5km)	JNE / 2015 municipality-level shapefile
lfine_dum_10	Natural log of Fine value x D(Distance to district with lower fine: 5-10km)	JNE JNE / 2015 municipality-level shapefile
lfine_dum_more10	Natural log of Fine value x D(Distance to district with lower fine: >10km)	ONPE/ 2015 municipality-level shapefile
ln_voters_hat_1820	Ln predicted voters 18-20 years old	INEI
ln_voters_hat_2129	Ln predicted voters 21-29 years old	INEI
ln_voters_hat_3035	Ln predicted voters 30-35 years old	INEI
ln_voters_hat_3650	Ln predicted voters 36-50 years old	INEI
ln_voters_hat_5175	Ln predicted voters 51-75 years old	INEI

ln_voters_hat_76	Ln predicted voters older than 75	INEI
set1	Share of settled fines, avg sub 2006-2010 to 2001 and 2006	JNE
set2	Share of settled fines, avg sub 2006-2010 to 2001 and 2006, sub 2010 to 2011 and sub 2014 to 2016	JNE
set3	Share of settled fines, sub 2006 to 2001 and 2006, sub 2010 to 2011 and sub 2014 to 2016	JNE

Datafile: Data/FigureA2.dta

Variable name	Definition	Primary source
year	Year	ONPE
category_10	Poverty category after 2010: 1=NP,2=P, 3=PE	JNE
sh_settled	Share of settled fines	JNE

Datafile: Data/Table5.dta

Variable name	Definition	Primary source
ubigeo	Unique numerical ID for each district	ONPE
year	Year	ONPE
fine_a	Fine value (S/ x 100)	JNE
province_id	Unique numerical ID for each province	ONPE
category_06	Poverty category in 2006: 1=NP, 2=P, 3=PE	JNE
gender	Indicator if Male	ENAHO
age	Age	ENAHO
factor	Expansion Factor ENAHO	ENAHO
primary_less	Indicator if primary education	ENAHO
highschool	Indicator if secondary education	ENAHO
frec_freq	Indicator if the respondent reports frequently being informed about political affairs, rather than occasionally, depending on the topic, or never	ENAHO
belong_party	Indicator if the respondent reports belonging to a political group or party	ENAHO
trust_parties1	Indicator if the respondent reports sufficient or considerable trust in political parties	ENAHO
interest	Indicator if the respondent reports being interested in politics, rather than being indifferent or repelled	ENAHO

Datafile: Data/TableC2.dta

Variable name	Definition	Primary source
ubigeo	Unique numerical ID for each district	ONPE
date	Election date	ONPE
paid	Share of paid fines	JNE

excuse	Share of excused fines	JNE
fine_a	Fine value	JNE
province_id	Unique numerical ID for each province	ONPE
category_06	Poverty category in 2006: 1=NP, 2=P, 3=PE	JNE
electores_01	Number of registered voters for 2001 presidential election	ONPE
settled	Share of settled fines	JNE
fine_2014p	Fine value x D(2014+)	JNE

Datafile: Data/elecciones_2016full.dta

Variable name	Definition	Primary source
ubigeo	Unique numerical ID for each district	ONPE
round	Presidential Election round	ONPE
electores	Registered Voters	ONPE
turnout	Turnout	ONPE
fraction_x (multiple variables)	Each variable denotes the fraction of voters with age x (ie. variable fraction_69 is the fraction of voters with age 69)	ONPE
local_id	Unique ID of polling station	ONPE
sh_70_75	Share of voters with ages 70-75	ONPE
sh_70_75_runoff	Share of voters with ages 70-75 x D(run-off)	ONPE
sh_70_72	Share of voters with ages 70-72	ONPE
yrs_wo_elec	Sum of voters with ages 70-75 x number of elections	ONPE

Datafile: Data/chile.dta

Variable name	Definition	Primary source
age	Age	Servicio Electoral de Chile
voto	Indicator if voted	Servicio Electoral de Chile
runoff	Indicator if run-off	Servicio Electoral de Chile
district	Unique ID circunscripcion-comuna-region	Servicio Electoral de Chile

Datafile: Data/google_trends.dta

Variable name	Definition	Primary source
search_term	Search term	Google trends
mes	Month	Google trends
multa	D(Search term related to fine)	Google trends
multa_post_06	D(Search term related to fine) x D(2006+)	Google trends
multa_post_10	D(Search term related to fine) x D(2010+)	Google trends
ln_google	Ln Google trends index	Google trends
year	Year	Google trends

multa_2006	D(Search term related to fine) x D(2006)	Google trends
multa_2007	D(Search term related to fine) x D(2007)	Google trends
multa_2008	D(Search term related to fine) x D(2008)	Google trends
multa_2009	D(Search term related to fine) x D(2009)	Google trends
multa_2010	D(Search term related to fine) x D(2010)	Google trends
multa_2011	D(Search term related to fine) x D(2011)	Google trends
multa_2012	D(Search term related to fine) x D(2012)	Google trends
multa_2013	D(Search term related to fine) x D(2013)	Google trends
multa_2014	D(Search term related to fine) x D(2014)	Google trends
multa_2015	D(Search term related to fine) x D(2015)	Google trends
multa_2016	D(Search term related to fine) x D(2016)	Google trends

Software and Computational Requirements

- Stata (code was last run with version 16)
- Note: The regression used in Figure 7 uses information on the universe of voters in the first and second round of the 2017 Chilean presidential elections. This is a very large sample (28.7 million observations). Some computers may require adjustments to the maximum number of variables (set maxvar) or the maximum matrix size (set matsize) to use this sample. Even then, some computers may simply be unable to use a dataset of this size. For convenience, we have written the code to use a random sample of voters of a size to be determined by the user using a local. Larger samples are computationally more demanding but yield results that are more precise and closer to the ones in this paper, which use the full sample. Samples of 10 million observations or more should results very similar to the ones reported in the paper.

Description of programs

Output files are called appropriate names (ie. table5.tex, figure12.pdf) and are easy to correlate with the manuscript.

- Replication_elect.do: Contains code to produce Tables 1-5, Appendix Tables A1, B1-B5, C1-C3, D1-D5, F1-F2, Figures 1-4, 6, Appendix Figures A1-A2, B1-B3, D1
- Replication_senior.do: Contains code to produce Table 6 and Figures 7, Appendix Figures G1-G3
- Replication_google.do: Contains code to produce Figures 5 and E1

Instructions

To run the code to produce output tables, the folder structure needs to be created as follows:

- User's working directory to be set as as "C:/User/…/" where the working path can be whatever the user determines
    - Working directory must contain .do files listed below

        - Replication_elect.do
        - Replication_senior.do
        - Replication_google.do
    - Data directory “C:/User/…/Data” must contain .dta files listed below
        - Elections.dta
        - elecciones_2016full.dta
        - google_trends.dta
        - chile.dta
        - Table5.dta
        - TableC2.dta
        - FigureA2.dta
    - Tables Results folder: Tables and Appendix Tables will be generated in this folder
        - “C:/User/…/Tables”
    - Figures Results folder: Figures and Appendix Figures will be generated in this folder
        - “C:/User/…/ Figures”

Run Replication_elect.do, Replication_senior.do, Replication_google.do to run all steps in sequence. Each code can be run separately.

List of tables and programs

Figure/ Table #	Dataset	Program	Line	Output file
Table 1	Data/Elections.dta	Replication_elect.do	20	Tables/Table1_a.tex and Tables/Table1_b.tex
Table 2	Data/Elections.dta	Replication_elect.do	99	Tables/Table2.tex
Table 3	Data/Elections.dta	Replication_elect.do	143	Tables/Table3.tex
Table 4	Data/Elections.dta	Replication_elect.do	172	Tables/Table4.tex
Table 5	Data/Table5.dta	Replication_elect.do	1182	Tables/Table5.tex
Table 6	Data/elecciones_2016full.dta	Replication_senior.do	25	Tables/Table6.tex
Figure 1	Data/Elections.dta	Replication_elect.do	759	Figures/Figure1.pdf
Figure 2	Data/Elections.dta	Replication_elect.do	769	Figures/Figure2.pdf
Figure 3	Data/Elections.dta	Replication_elect.do	814	Figures/Figure3.pdf
Figure 4	Data/Elections.dta	Replication_elect.do	872	Figures/Figure4.pdf
Figure 5	Data/google_trends.dta	Replication_google.do	17	Figures/Figure5.pdf
Figure 6	Data/Elections.dta	Replication_elect.do	907	Figures/Figure6.pdf
Figure 7	Data/elecciones_2016full.dta and Data/chile.dta	Replication_senior.do	74	Figures/Figure7_a.pdf and Figures/Figure7_b.pdf
Table A1	Data/Elections.dta	Replication_elect.do	201	No output

Table B1	Data/Elections.dta	Replication_elect.do	206	Tables/TableB1.tex
Table B2	Data/Elections.dta	Replication_elect.do	279	Tables/TableB2.tex
Table B3	Data/Elections.dta	Replication_elect.do	307	Tables/TableB3.tex
Table B4	Data/Elections.dta	Replication_elect.do	362	Tables/TableB4.tex
Table B5	Data/Elections.dta	Replication_elect.do	387	Tables/TableB5_a.tex and Tables/TableB5_b.tex
Table C1	Data/Elections.dta	Replication_elect.do	436	Tables/TableC1.tex
Table C2	Data/TableC2.dta	Replication_elect.do	1208	Tables/TableC2.tex
Table C3	Data/Elections.dta	Replication_elect.do	467	Tables/TableC3.tex
Table D1	Data/Elections.dta	Replication_elect.do	505	Tables/TableD1.tex
Table D2	Data/Elections.dta	Replication_elect.do	522	Tables/TableD2.tex
Table D3	Data/Elections.dta	Replication_elect.do	566	Tables/TableD3.tex
Table D4	Data/Elections.dta	Replication_elect.do	601	Tables/TableD4_a.tex and Tables/TableD4_b.tex
Table D5	Data/Elections.dta	Replication_elect.do	676	Tables/TableD5.tex
Table E1	n.a. (no data)			
Table F1	Data/Elections.dta	Replication_elect.do	710	Tables/TableF1.tex
Table F2	Data/Elections.dta	Replication_elect.do	730	Tables/TableF2.tex
Figure A1	Data/Elections.dta	Replication_elect.do	959	Figures/FigureA1.pdf
Figure A2	Data/FigureA2.dta	Replication_elect.do	1159	Figures/FigureA2.pdf
Figure B1	Data/Elections.dta	Replication_elect.do	974	Figures/FigureB1.pdf
Figure B2	Data/Elections.dta	Replication_elect.do	1035	Figures/FigureB2.pdf
Figure B3	Data/Elections.dta	Replication_elect.do	1085	Figures/FigureB3_a.pdf and Figures/FigureB3_b.pdf
Figure D1	n.a. (no data)	Replication_elect.do	1167	Figures/FigureD1.pdf
Figure E1	Data/google_trends.dta	Replication_google.do	45	Figures/FigureE1.pdf
Figure G1	Data/elecciones_2016full.dta	Replication_senior.do	136	Figures/FigureG1.pdf
Figure G2	Data/elecciones_2016full.dta and Data/chile.dta	Replication_senior.do	154	Figures/FigureG2_a.pdf and Figures/FigureG2_b.pdf
Figure G3	Data/elecciones_2016full.dta and Data/chile.dta	Replication_senior.do	190	Figures/FigureG3.pdf