Supplementary Information for 'The Impact of Real World Information Shocks on Political Attitudes: Evidence from the Panama Papers Disclosures'

April 2022

This file contains supplementary information for the paper, as well as the code required to perform the main analysis in the paper itself. We are grateful to the authors of Larsen, Cutts and Goodwin (2020) for providing well documented code for the same research design - some of our code below is inspired by their approach.[1]

1 Data

Both survey datasets used in the analysis are subject to restrictions on dissemination to third parties and as a consequence cannot be provided as part of the replication materials. However, the data are freely available to individuals signing the terms of usage of the respective data distributors.[2][3]

[1] Larsen, E.G., Cutts, D. and Goodwin, M.J. (2020), Do terrorist attacks feed populist Eurosceptics? Evidence from two comparative quasi-experiments. *European Journal of Political Research*, 59: 182-205. doi:10.1111/1475-6765.12342

[2] ISSP Research Group (2018): International Social Survey Programme: Role of Government V - ISSP 2016. GESIS Data Archive, Cologne. ZA6900 Data file Version 2.0.0, doi:10.4232/1.13052.

[3] Centro de Investigaciones Sociológicas. (2016). Study Nr. 3134: April 2016 Barometer. Retrieved from CIS website.

2 Descriptive Statistics

Table 1: Descriptive Statistics for Data on France

Variable	Mean	Std.Dev	Min	Max	N.Valid	Pct.Valid
Treatment indicators						
Treatment, full sample	0.35	0.48	0.00	1	1494.72	100
Treatment, 1 month window	0.33	0.47	0.00	1	380.72	25
Independent variables						
Parti Socialiste voter indicator	0.27	0.45	0.00	1	1144.39	76
Age	49.39	18.15	18.00	97	1501.00	100
Female indicator	0.52	0.50	0.00	1	1501.00	100
University indicator	0.41	0.49	0.00	1	1495.75	100
Retiree indicator	0.28	0.45	0.00	1	1501.00	100
Political sophistication indicator (10)	0.47	0.50	0.00	1	1482.98	99
Dependent variables						
Tax contributors treated equally (1)	-0.04	1.01	-1.56	1	1340.04	89
Companies, try to avoid paying taxes (2)	-0.03	1.00	-2.33	1	1394.01	93
Taxes for high income (3)	0.00	1.00	-1.57	2	1378.67	92
Taxes for low income (4)	0.01	1.01	-2.38	1	1405.60	94
Gov, reduce income differences (5)	0.00	1.00	-2.40	1	1438.17	96
Politicians corrupt (6)	0.09	1.02	-2.53	2	1430.77	95
Public officials corrupt (7)	0.08	1.01	-2.26	2	1402.77	93
Economic elite influence gov. policy (8)	0.65	0.48	0.00	1	1390.57	93
Common people influence gov. policy (9)	0.16	0.36	0.00	1	1384.86	92

The full wording of the questions used as dependent variables:

For perceptions of tax compliance in France

1. "In general, how often do you think that the tax authorities in France do the following... treat all tax contributors equally under the law, without considering their place in society." Respondents could give one of four answers, ranging from "Almost always" to "almost never".
2. "In general, how often do you think that major private companies in [COUNTRY] do the following... try to avoid paying their taxes?." Respondents could give one of four answers, ranging from "Almost always" to "almost never".

For redistributive attitudes in France

3. "Generally, how would you describe taxes in France today? ... First, for those with high incomes, are taxes:" Respondents could give one of five answers, ranging from "much too high" to "much too low".
4. "Generally, how would you describe taxes in France today? ... Lastly, for those with low incomes, are taxes:" Respondents could give one of five answers, ranging from "much too high" to "much too low".
5. "On the whole, do you think it should or should not be the government's responsibility... to reduce income differences between the rich and the poor." Respondents could give one of four answers, ranging from "definitely should be" to "definitely should not be".

For corruption beliefs in France

6. "In your opinion, about how many politicians in France are involved in corruption?" Respondents could give one of five answers, ranging from "Almost none" to "almost all".
7. "In your opinion, about how many public officials in France are involved in corruption?" Respondents could give one of five answers, ranging from "Almost none" to "almost all".

8. [Alternative corruption question] "Here is a list of people or organization that might influence the government policy-making. Write down the people or organizations that influence government policy-making in France the most, in first place and second place." Respondents who choose the "economic sector, banks and industry" as either first or second are coded as 1, otherwise coded as 0.

9. [Alternative corruption question] "Here is a list of people or organization that might influence the government policy-making. Write down the people or organizations that influence government policy-making in France the most, in first place and second place." Respondents who choose the "citizens in general" as either first or second are coded as 1, otherwise coded as 0.

For political sophistication indicator in France

10. We combine the answers to the following two questions:

- A. "How interested are you in politics?" Respondents could give one of five answers, from "not at all" to "a lot".
- B. "I understand pretty well the big questions in the national political debate". Respondents could give one of five answers, from "disagree strongly" to "agree strongly".
- These two items were recaled, such that the mean was at 0, with 1 unit representing a one standard deviation from 0. The average between these two items was then calculated, with a Cronbach's alpha of 0.53 obtained. A median split of this variable was then performed, in order to create "high" (at or above the median) and "low" (below the median) levels of political sophistication.

Table 2: Descriptive Statistics for Data on Spain

Variable	Mean	Std.Dev	Min	Max	N.Valid	Pct.Valid
Treatment indicators						
Treatment, full sample	0.84	0.36	0.00	1.00	2435	97.79
Treatment, 2 day window	0.66	0.47	0.00	1.00	1140	45.78
Treatment, 1 day window	0.55	0.50	0.00	1.00	608	24.42
Independent variables						
Voted PP in 2015	0.19	0.39	0.00	1.00	2490	100.00
Never attends church indicator	0.61	0.49	0.00	1.00	1781	71.53
Unemployed indicator	0.18	0.39	0.00	1.00	2490	100.00
Small town indicator	0.48	0.50	0.00	1.00	2490	100.00
Andalucia	0.18	0.39	0.00	1.00	2490	100.00
Canary Islands	0.04	0.20	0.00	1.00	2490	100.00
Castilla - La Mancha	0.05	0.21	0.00	1.00	2490	100.00
Castile and Leon	0.06	0.23	0.00	1.00	2490	100.00
Catalonia	0.15	0.36	0.00	1.00	2490	100.00
Valencia	0.10	0.30	0.00	1.00	2490	100.00
Galicia	0.07	0.25	0.00	1.00	2490	100.00
Madrid	0.13	0.34	0.00	1.00	2490	100.00
Basque Country	0.05	0.22	0.00	1.00	2490	100.00
Political sophistication	0.48	0.50	0.00	1.00	2477	99.48
Dependent variables						
Ciudadanos, likely vote (1)	0.00	1.00	-0.92	2.45	2303	92.49
Podemos, likely vote (1)	0.00	1.00	-0.76	2.57	2319	93.13
PSOE, likely vote (1)	0.00	1.00	-1.00	2.20	2329	93.53
PP, likely vote (1)	0.00	1.00	-0.75	2.07	2349	94.34
Corruption MIP, First mention indicator	0.18	0.38	0.00	1.00	2490	100.00
Corruption MIP, combined indicator	0.47	0.50	0.00	1.00	2490	100.00
Would vote PP indicator (2)	0.19	0.39	0.00	1.00	2490	100.00
Would vote POSE indicator (2)	0.18	0.38	0.00	1.00	2490	100.00
Would vote Podemos indicator (2)	0.09	0.28	0.00	1.00	2490	100.00
Would vote Ciudadanos (2)	0.13	0.33	0.00	1.00	2490	100.00

The full wording of the questions used as dependent variables in Spain

1. "As you know, in Spain there are different political parties and coalitions for which you can vote during an election. Please report the probability that you would vote for each of the following parties, using a scale from 0 to 10, where 0 represents 'with complete certainty, I would never vote for them,' and 10 represents 'with complete certainty, I would always vote for them'." Respondents were shown 5 political parties, plus an additional 1-3 regional parties if they lived in the particular regions.

2. [Alternative voting question] "Supposing that a general election were held tomorrow – meaning a vote for the Spanish Parliament – for which party would you vote?" Respondents were not given response options, but their answers were coded according to the main party options, regional options, as well as various non-participatory options.

The four major parties in Spain at the time were: the conservative Partido Popular (PP), the social democratic Partido Socialista Obrero Español (PSOE), the left-wing populist Podemos, and the centrist Ciudadanos. In the subsequent June 2016 elections the four parties collectively received about 90% of all votes (33.0%, 22.6%, 21.2%, and 13.1%, respectively).

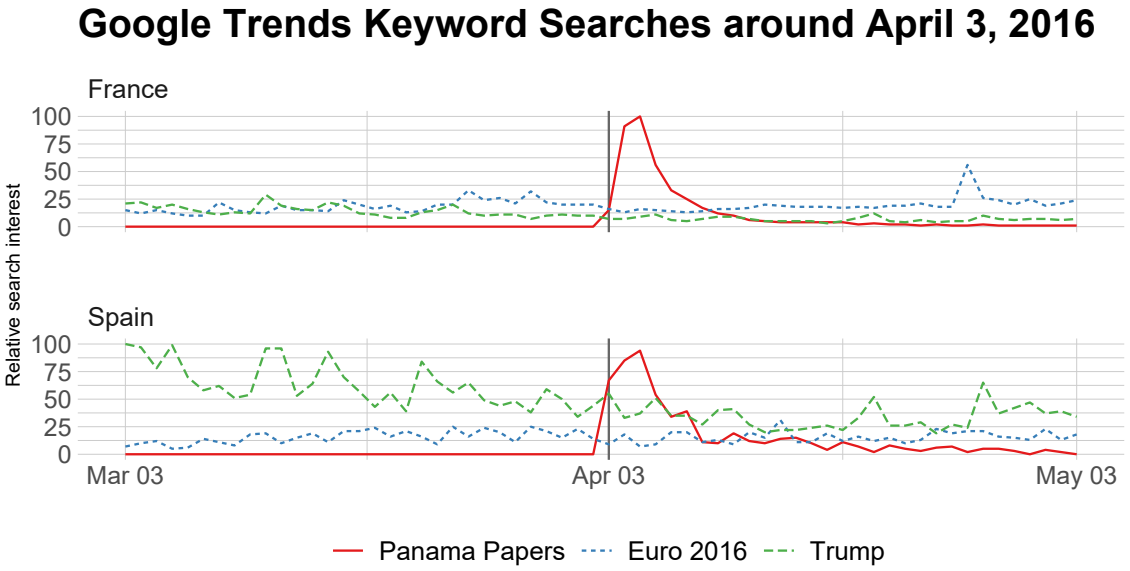
The political sophistication indicator in Spain

3. "As you know, after the election this past December 20, the political parties have begin to negotiate

forming a government. I would like for you to tell me with how much interest have you followed the news about these negotiations." Respondents were given a 5 pt scale, from "with much interest" to "with no interest".

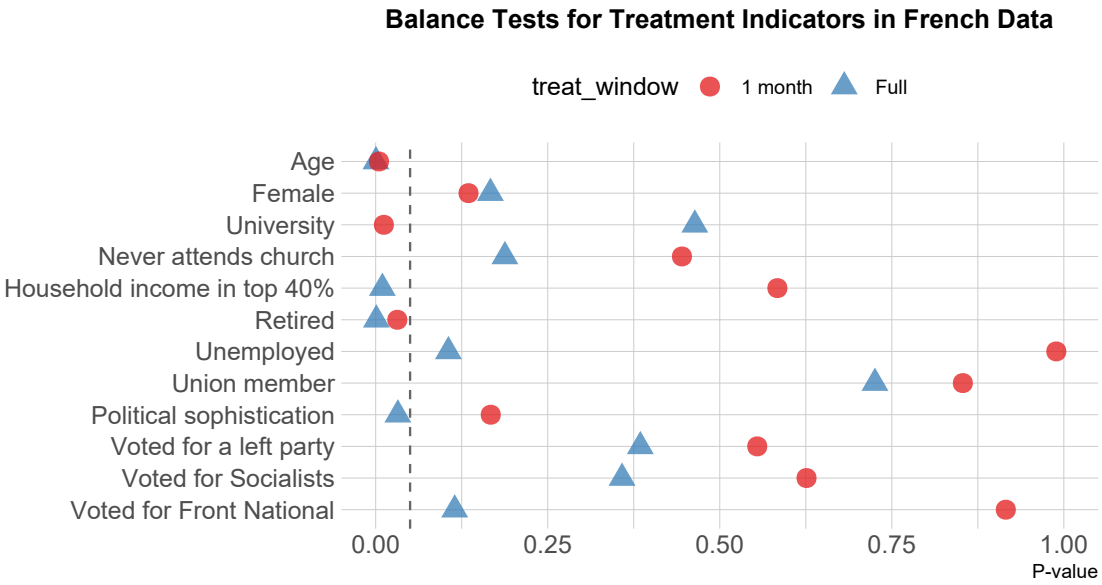
2.1 Google Trends Analysis

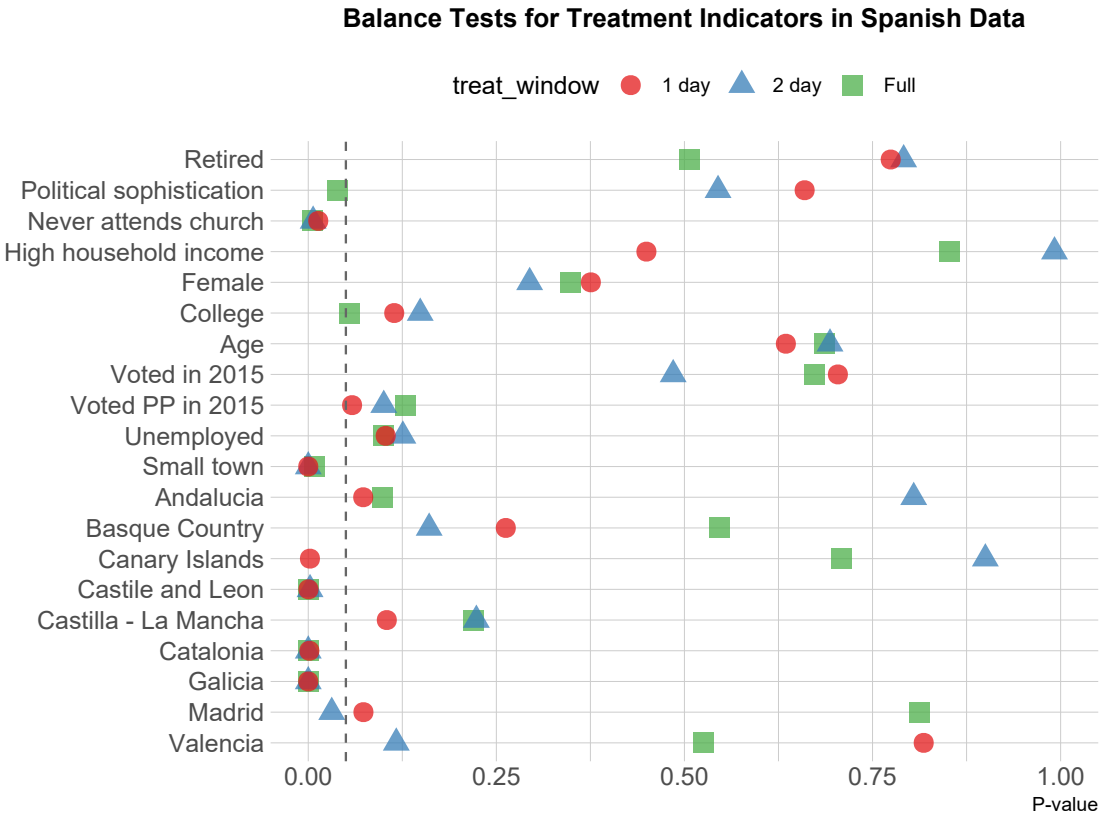
Analysis reported in paper.



2.2 Balance Tests

Below are the results of balance tests for the different treatment windows (Markers refer to different treatment windows). We regress the treatment indicator on each covariate seperately. The figures show the p-values of each covariate — low values signify that the covariate is correlated with treatment status. In the French data, age, education, and an indicator for retirement are significantly imbalanced, while in the Spanish data, church attendance, town size, and multiple regional indicator variables are imbalanced. To account for such correlations, our main analysis is based on entropy balance matching which balances the values of covariates with a p-value below 0.05.


Balance Tests for Treatment Indicators in French Data
treat_window
1 month
Full
Age
Female
University
Never attends church
Household income in top 40%
Retired
Unemployed
Union member
Political sophistication
Voted for a left party
Voted for Socialists
Voted for Front National
0.00
0.25
0.50
0.75
1.00
P-value


Balance Tests for Treatment Indicators in Spanish Data
treat_window
1 day
2 day
Full
Retired
Political sophistication
Never attends church
High household income
Female
College
Age
Voted in 2015
Voted PP in 2015
Unemployed
Small town
Andalucia
Basque Country
Canary Islands
Castile and Leon
Castilla - La Mancha
Catalonia
Galicia
Madrid
Valencia
0.00
0.25
0.50
0.75
1.00
P-value

2.3 Balance Tables

Table 3: French Data: Covariate Balance Before and After Entropy Reweighting

	Mean			Variance		
	Treatment	Control		Treatment	Control	
Covariate		Pre	Post		Pre	Post
Female	0.55	0.46	0.55	0.25	0.25	0.25
Age	45.00	49.58	45.04	257.87	349.79	259.89
University educated	0.46	0.37	0.46	0.25	0.23	0.25
Retired	0.20	0.29	0.20	0.16	0.21	0.16

Reweighting based on matching first and second moments of covariates to treatment values using the ebalance package in Stata. Sample weights provided with the data used as base weights before matching.

Table 4: Spanish Data: Covariate Balance Before and After Entropy Reweighting

	Mean			Variance		
	Treatment	Control		Treatment	Control	
Covariate		Pre	Post		Pre	Post
College indicator	0.18	0.21	0.18	0.15	0.16	0.15
Never attends church indicator	0.64	0.54	0.64	0.23	0.25	0.23
Unemployed	0.19	0.16	0.19	0.16	0.13	0.16
Small town	0.35	0.53	0.35	0.23	0.25	0.23
Andalucia	0.14	0.15	0.14	0.12	0.13	0.12
Canary Islands	0.04	0.05	0.04	0.04	0.05	0.04
Castilla - La Mancha	0.02	0.03	0.02	0.02	0.03	0.02
Castile and Leon	0.08	0.13	0.08	0.07	0.12	0.07
Catalonia	0.17	0.06	0.17	0.14	0.05	0.14
Valencia	0.12	0.08	0.12	0.11	0.08	0.11
Galicia	0.08	0.17	0.08	0.07	0.14	0.07
Madrid	0.09	0.12	0.09	0.08	0.10	0.08
Basque Country	0.07	0.06	0.07	0.06	0.05	0.06

3 Main Analysis and Alternative Specifications

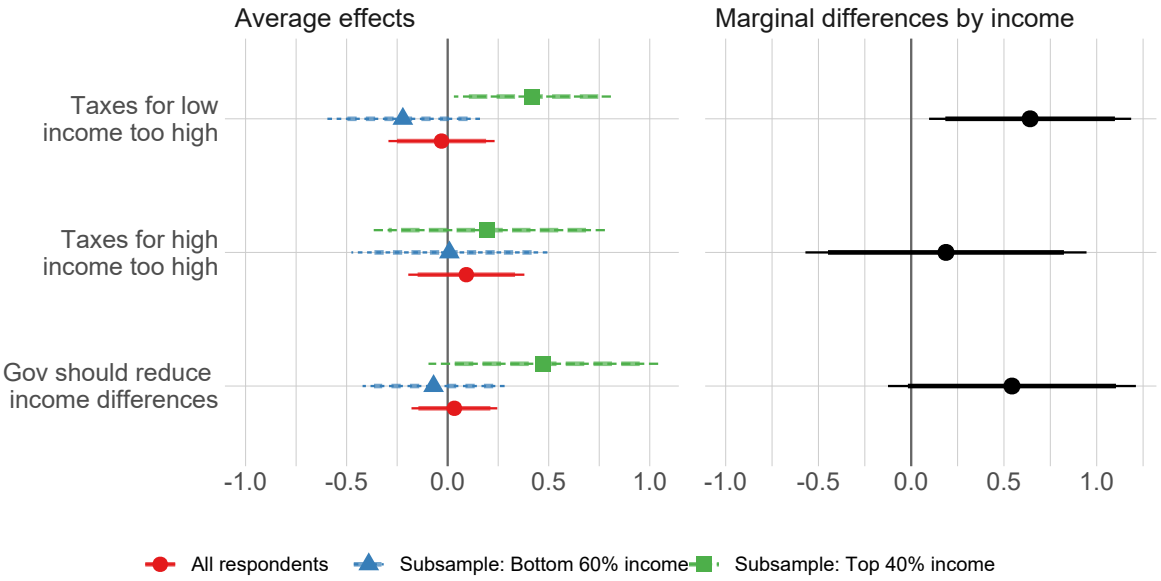
In this section we reproduce figures from the main analysis along with several robustness checks. First, we change the model specification and use a simple bivariate regression of the outcome variables on the main treatment indicators. Second, we show results when we change the treatment window bandwidth: In the French case we compare the one month window to the full sample window, whereas in the Spanish case we compare the 2 day window to a 1 day window as well as the full sample window. Finally, in the Spanish case we report the results of an alternative dependent variable: Vote choice as captured by a "Sunday question". As the additional variable is an indicator variable, we report the results in terms of changes in predicted probability for the relevant variable. Due to the high correlation between prior vote choice and current vote intentions the subsample size for the voting variables becomes extremely small. As a consequence, we do not report results by subsample for the voting variables.

3.1 Redistributive Attitudes in France

3.1.1 Analysis Reported in Main Paper

Average effects of treatment and marginal differences by subgroup

One month treatment window, entropy balance matching specification



3.1.1.1 Regression Results

	(1) Inc. Diff	(2) Inc. Diff	(3) Hi Tax	(4) Hi Tax	(5) Low Tax	(6) Low Tax
Treatment	0.02	-0.09	0.11	0.04	-0.04	-0.30
	(0.11)	(0.19)	(0.15)	(0.25)	(0.14)	(0.20)
High Income Indicator		-0.60*		-0.07		-0.77*
		(0.22)		(0.22)		(0.18)
Treatment x High Income		0.52		0.16		0.72*
		(0.34)		(0.39)		(0.28)
Observations	343	192	328	185	343	190

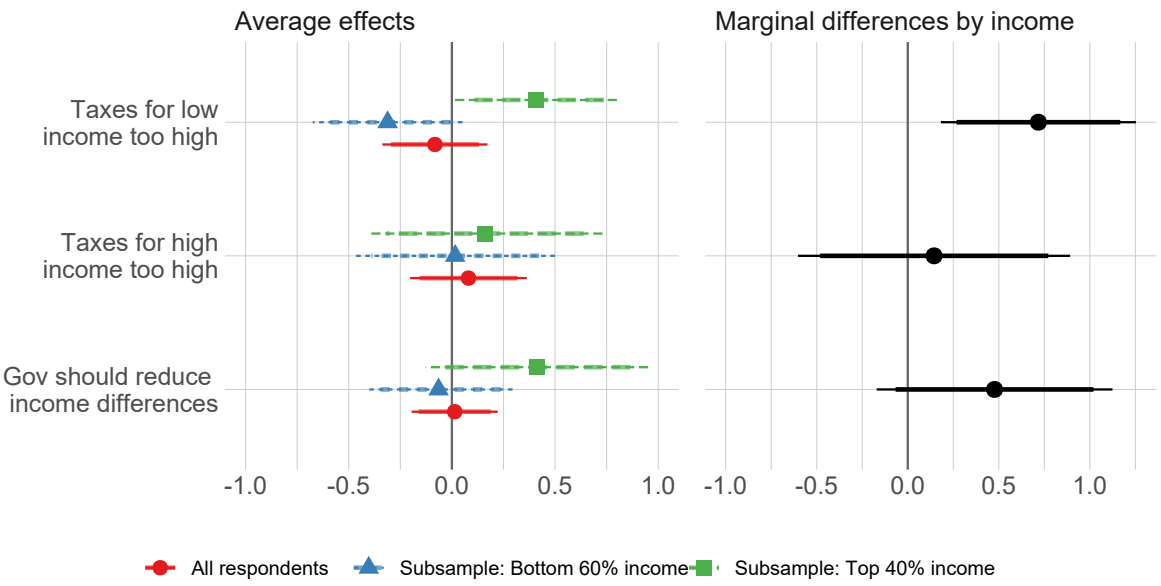
OLS regression estimates calculated with entropy balancing weights.
DV in models 1-2: Gov. should reduce income diff., models 3-4: High income tax too high, models 5-6: Low income tax too high. + p<0.1, * p<0.05.

3.1.2 Alternative Specifications

3.1.2.1 Bivariate Regression of Outcome on Treatment Indicator (No Matching)

Average effects of treatment and marginal differences by subgroup

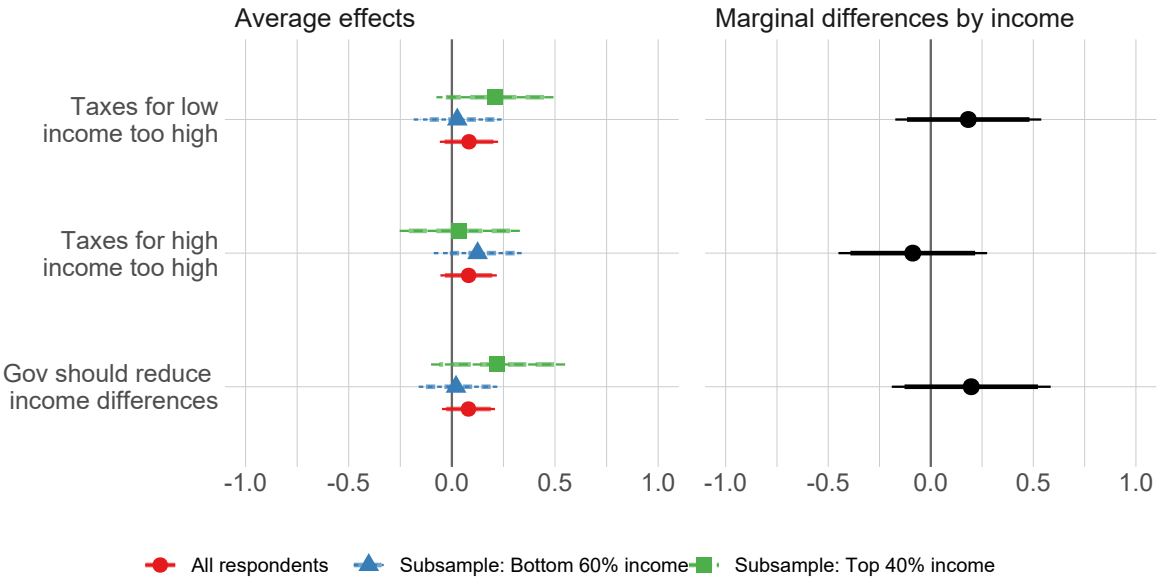
One month treatment window, bivariate specification



3.1.2.2 Full Sample Bandwith (Not One Month)

Average effects of treatment and marginal differences by subgroup

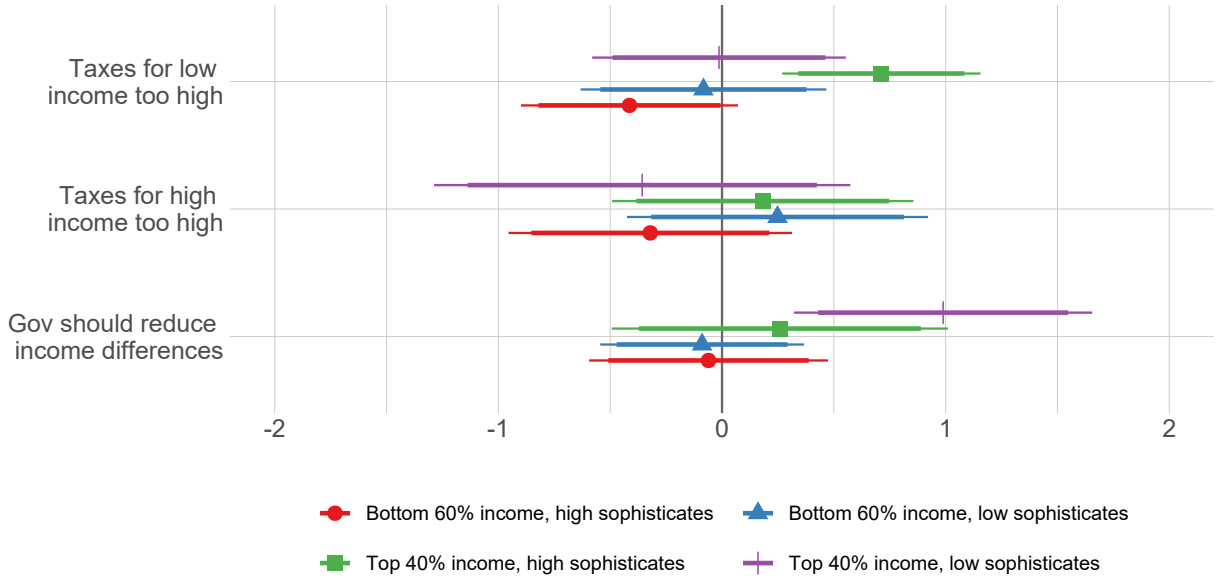
Full sample treatment window, entropy balance matching specification



3.1.2.3 Regression of Outcome on Treatment Indicator and Political Sophistication Moderator

Average effects of treatment by subgroup

One month treatment window, entropy balance matching specification

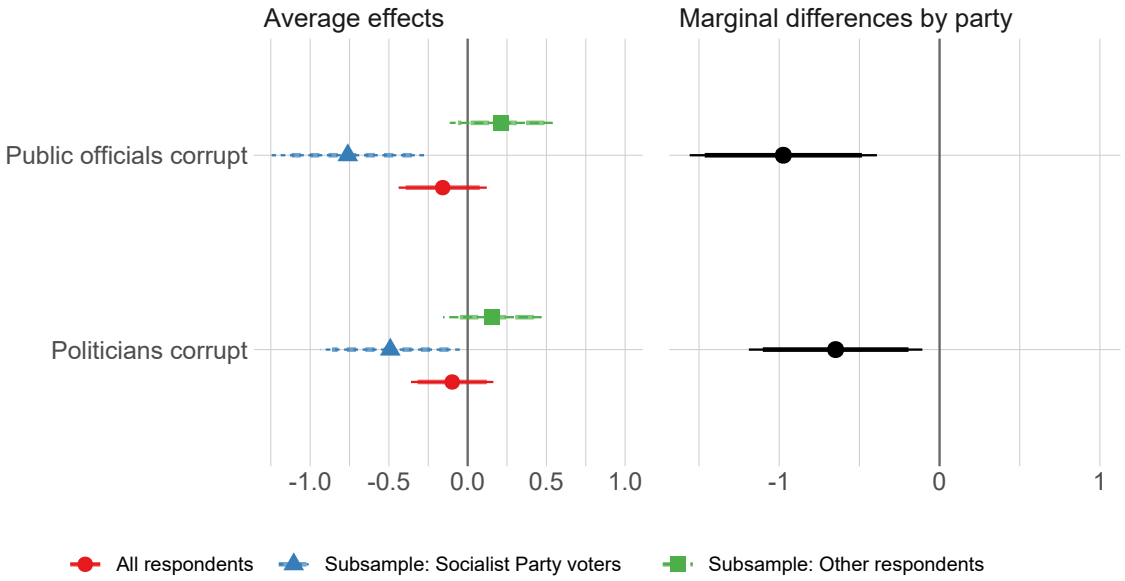


3.2 Corruption in France

3.2.1 Analysis Reported in Main Paper

Average effects of treatment and marginal differences by subgroup

One month treatment window, entropy balance matching specification



3.2.1.1 Regression Results

	(1) Auth	(2) Auth	(3) Avoid	(4) Avoid	(5) Pol	(6) Pol	(7) Pub	(8) Pub
Treatment	-0.11	-0.07	-0.39*	-0.31+	-0.11	0.17	-0.17	0.23
	(0.16)	(0.20)	(0.13)	(0.18)	(0.14)	(0.16)	(0.15)	(0.17)
Socialist Voter		-0.13		-0.01		0.13		0.02
		(0.22)		(0.20)		(0.18)		(0.14)
Treatment x Socialist		0.36		-0.12		-0.68*		-0.97*
		(0.31)		(0.29)		(0.28)		(0.30)
Observations	343	280	342	280	343	278	338	274

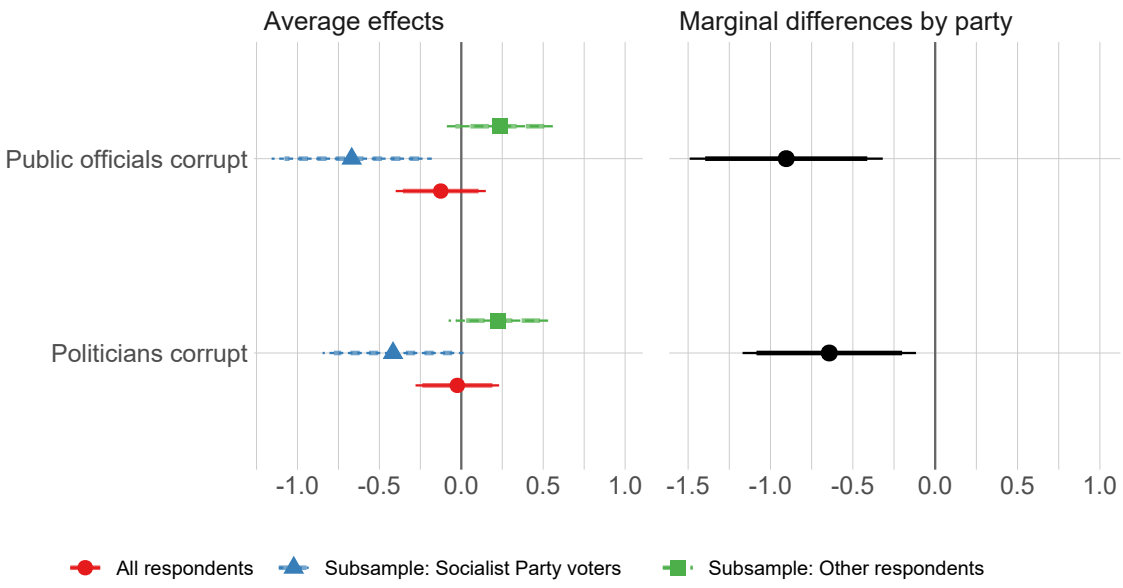
OLS regression estimates calculated with entropy balancing weights.
DV in models 1-2: Authorities, make people pay takes, models 3-4: Companies avoid paying taxes, models 5-6: Politicians corrupt, models 7-8: Public officials corrupt. + p<0.1, * p<0.05.

3.2.2 Alternative Specifications

3.2.2.1 Bivariate Regression of Outcome on Treatment Indicator (No Matching)

Average effects of treatment and marginal differences by subgroup

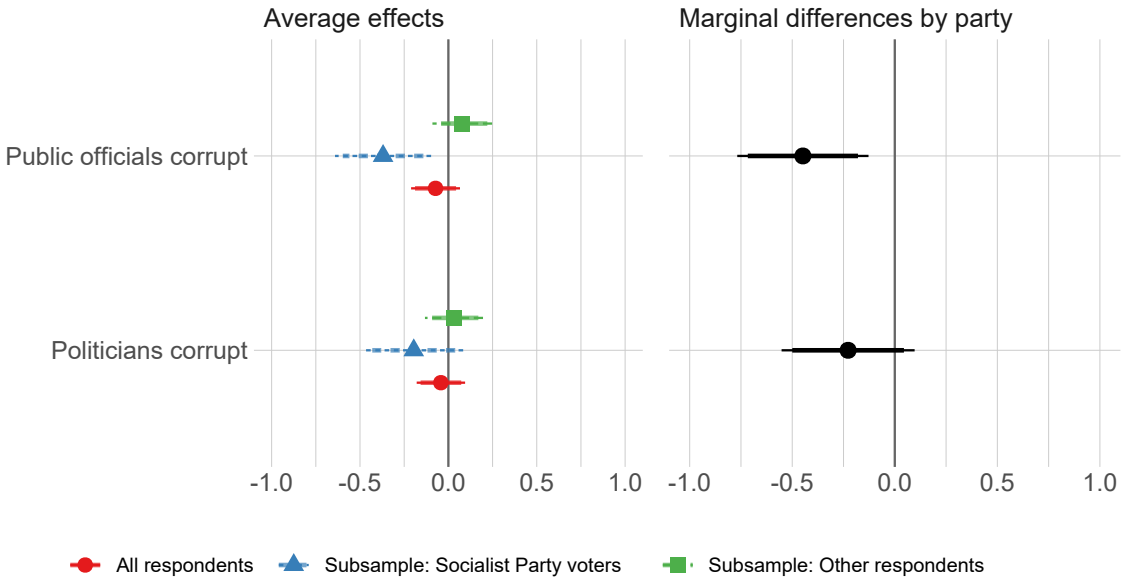
One month treatment window, bivariate specification



3.2.2.2 Full Sample Bandwith (Not One Month)

Average effects of treatment and marginal differences by subgroup

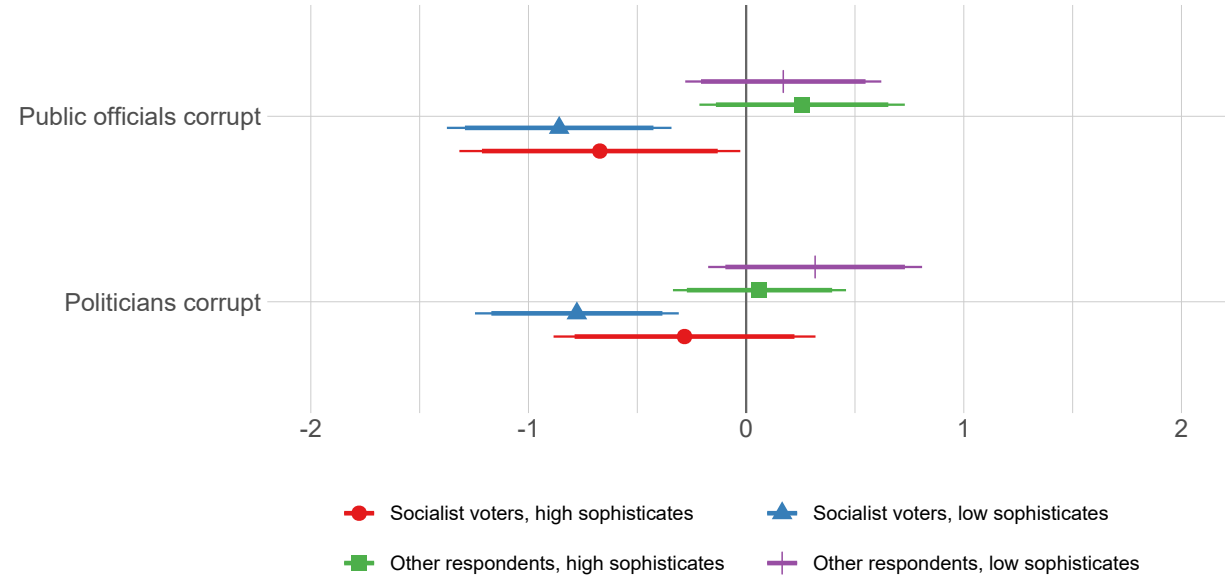
Full sample treatment window, entropy balance matching specification



3.2.2.3 Regression of Outcome on Treatment Indicator and Political Sophistication Moderator

Average effects of treatment by subgroup

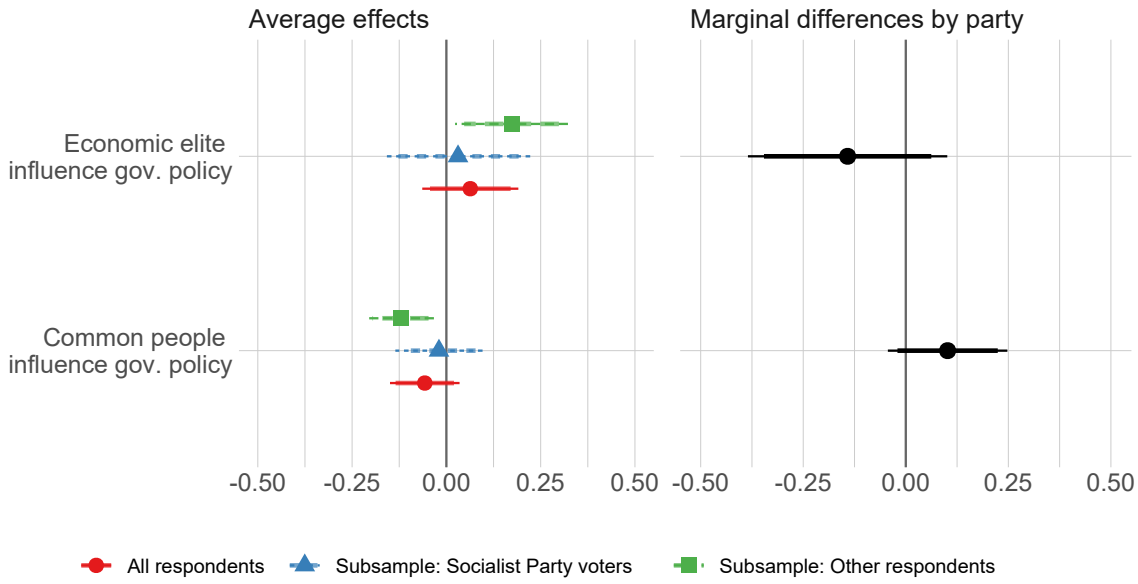
One month treatment window, entropy balance matching specification



3.2.2.4 Alternative Outcome Measure - Main Effect

Average effects of treatment and marginal differences by subgroup

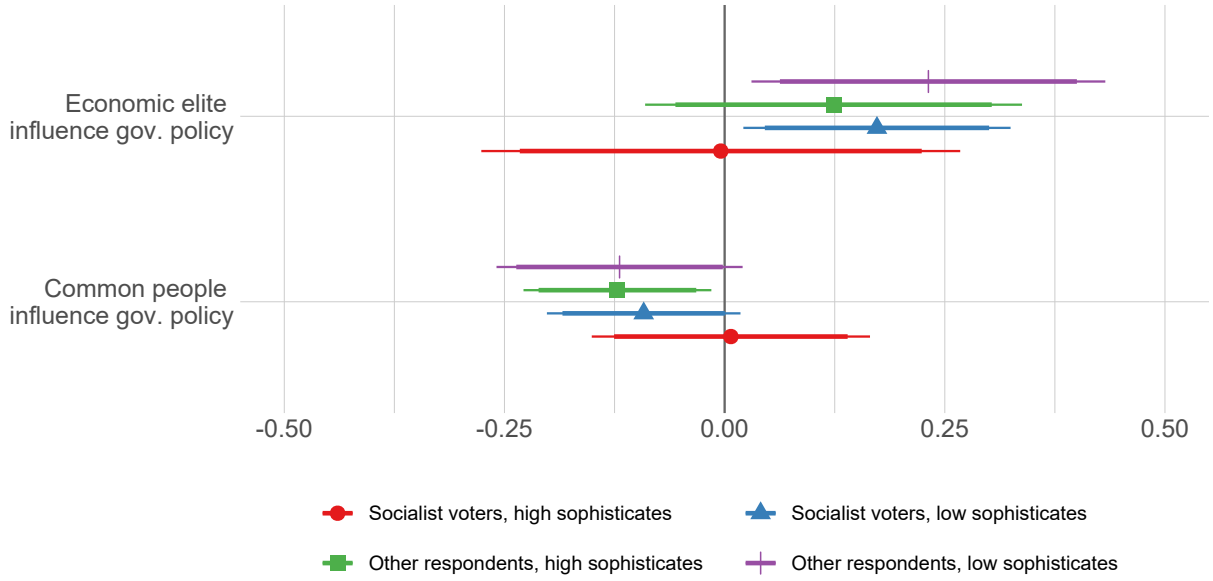
One month treatment window, entropy balance matching specification



3.2.2.5 Alternative Outcome Measure - Moderation Effect

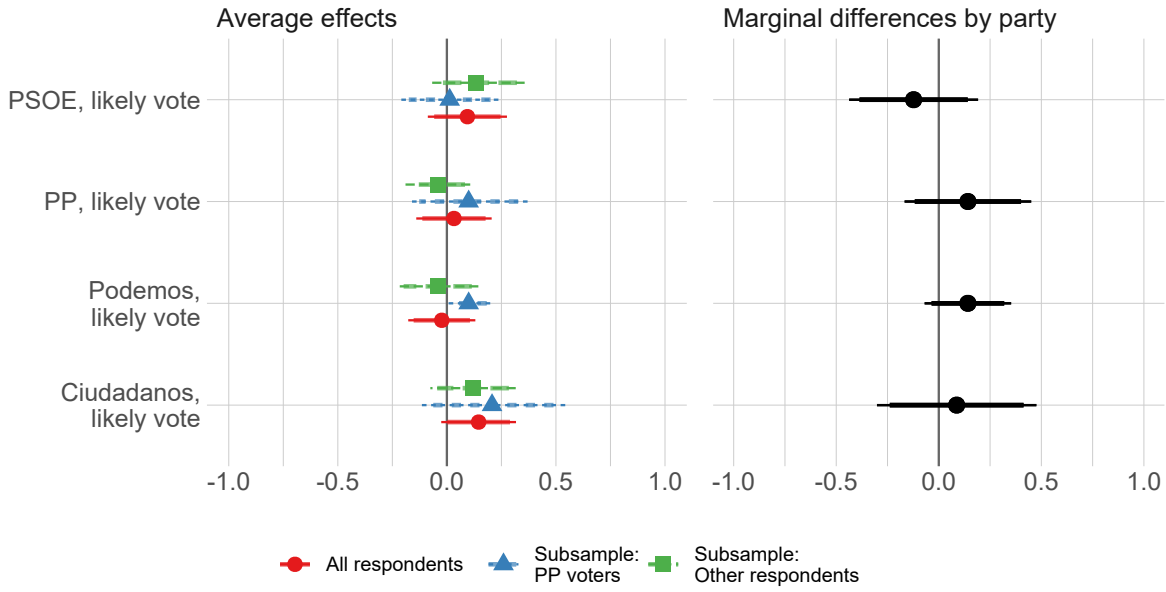
Average effects of treatment by subgroup

One month treatment window, entropy balance matching specification



3.3 Voting Intentions in Spain

3.3.1 Analysis Reported in Main Paper



3.3.1.1 Regression Results

	(1) Ciud	(2) Ciud	(3) Pode	(4) Pode	(5) PSOE	(6) PSOE	(7) PP	(8) PP
Treatment	0.15^{+}	0.12	-0.02	-0.04	0.09	0.14	0.03	-0.04
	(0.09)	(0.10)	(0.08)	(0.10)	(0.09)	(0.11)	(0.09)	(0.08)
PP Voter		0.25		-0.74*		-0.55*		1.59*
		(0.17)		(0.08)		(0.13)		(0.14)
Treatment x PP		0.09		0.14		-0.12		0.14
		(0.20)		(0.11)		(0.16)		(0.16)
Observations	713	713	718	718	725	725	729	729

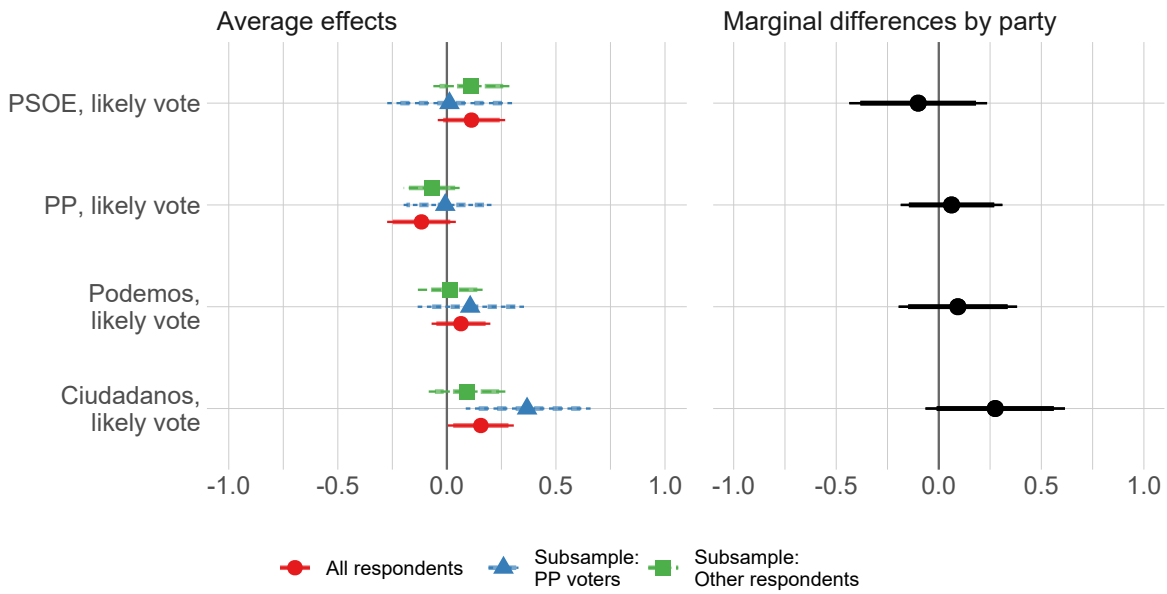
OLS regression estimates calculated with entropy balancing weights.
DV in models 1-2: Likely to vote Ciudadanos, models 3-4: ...to vote Podemos, models 5-6: ...to vote PSOE, models 7-8: ...to vote PP. + p<0.1, * p<0.05.

3.3.2 Alternative Specifications

3.3.2.1 Bivariate Regression of Outcome on Treatment Indicator (No Matching)

Average effects of treatment and marginal differences by subgroup

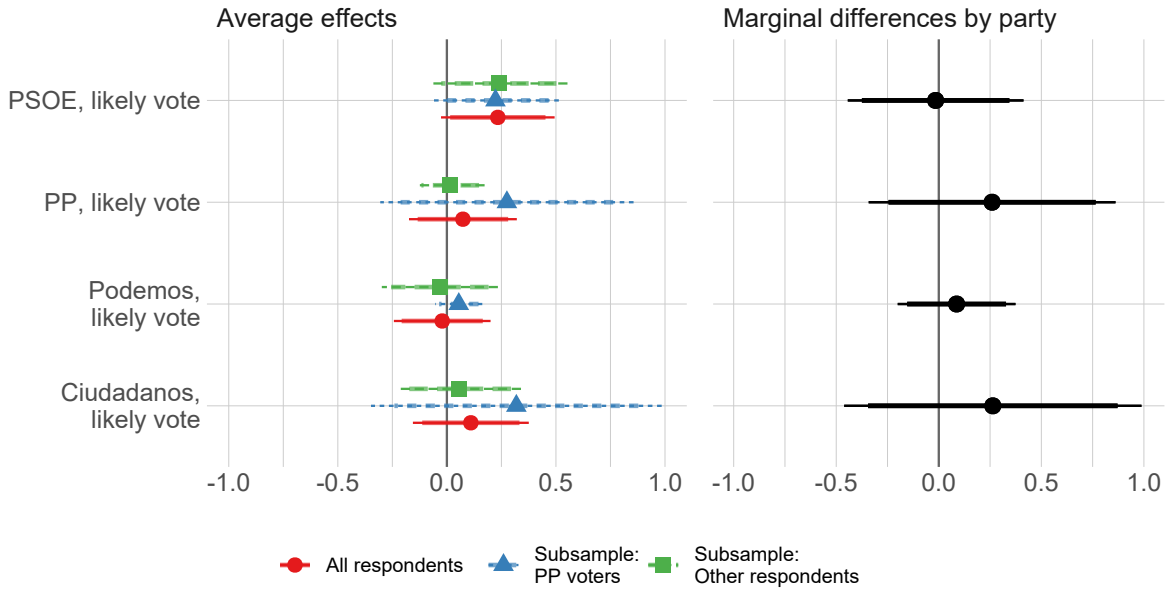
Two day treatment window, bivariate specification



3.3.2.2 One Day Sample Bandwith (Not Two Days)

Average effects of treatment and marginal differences by subgroup

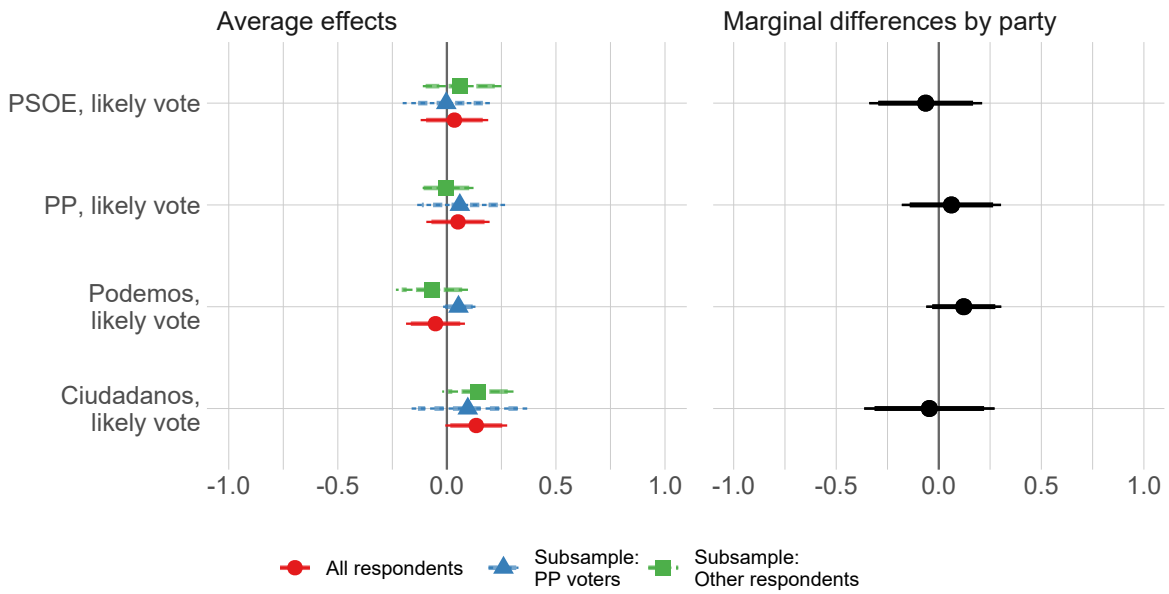
One day treatment window, entropy balance matching specification



3.3.2.3 Full Sample Bandwith (Not Two Days)

Average effects of treatment and marginal differences by subgroup

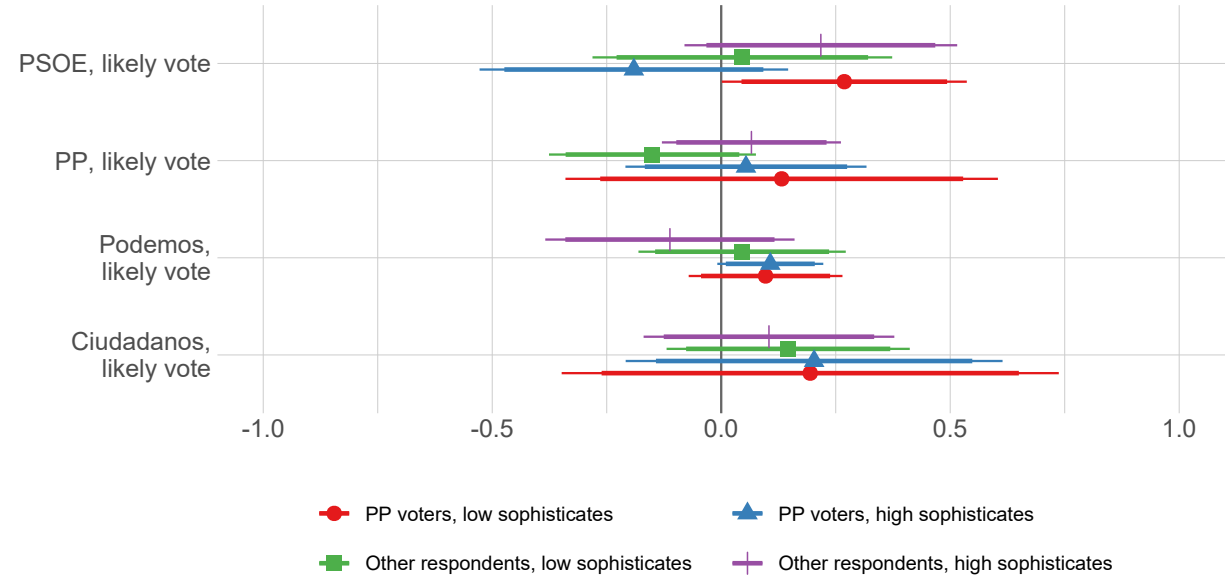
Full sample treatment window, entropy balance matching specification



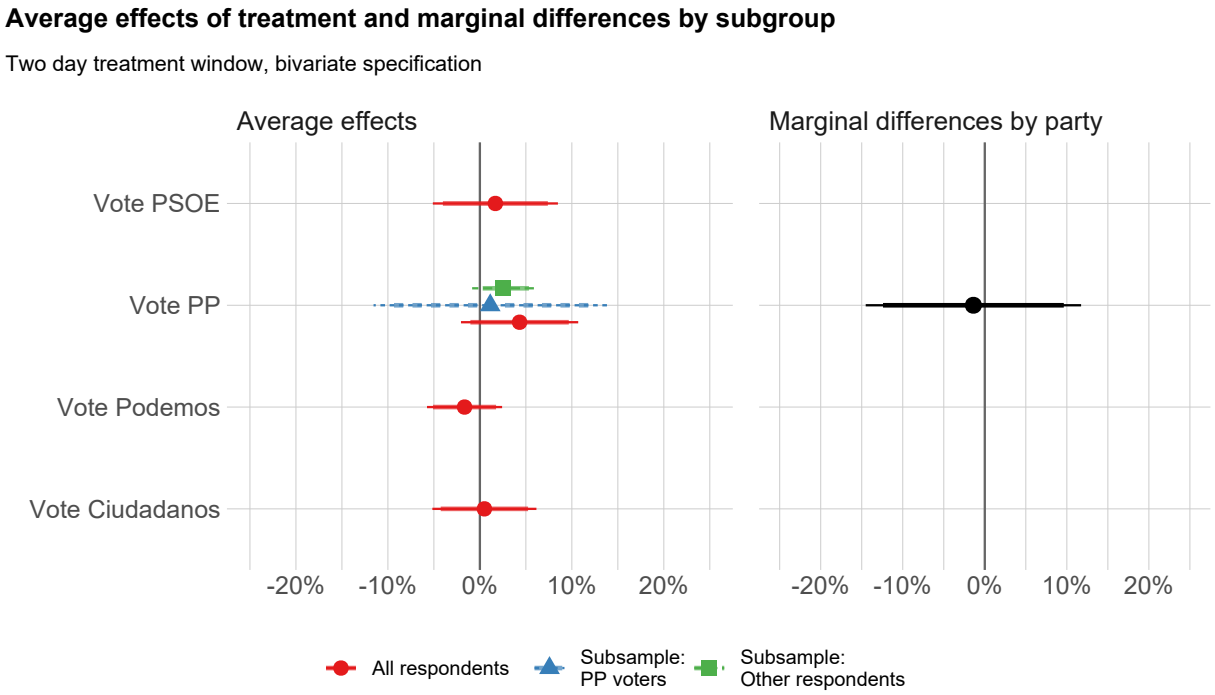
3.3.2.4 Regression of Outcome on Treatment Indicator and Political Sophistication Moderator (Two Days)

Average effects of treatment by subgroup

Two day treatment window, entropy balance matching specification



3.3.2.5 Voting Intentions in Spain: Alternative measure



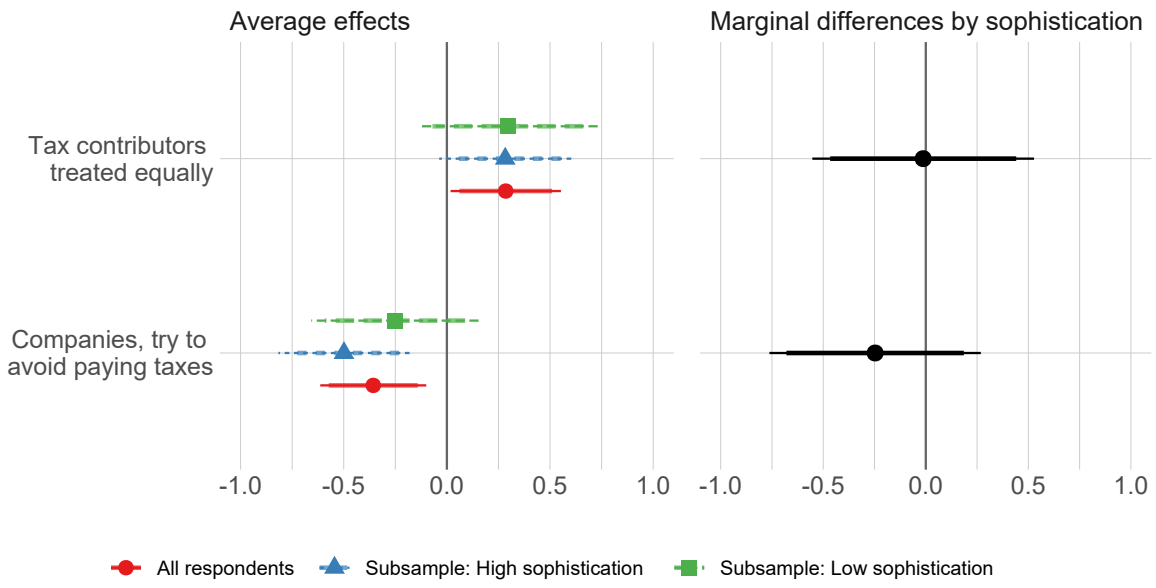
4 Pseudo Manipulation Checks - Perceptions of Tax Compliance in France

We take advantage of two unique questions in the ISSP survey that serve as "manipulation checks'', of sorts, of the treatment. Respondents provide their level of agreement with two statements: major private companies try to avoid paying taxes, and tax contributors are treated equally under the law by French tax authorities, regardless of their place in society. Since the Panama Papers mostly exposed wealthy individuals and politicians, not corporations, exposure to this treatment should decrease respondents' impression of (relative) tax avoidance among large firms. At the same time, the exposure highlighted how wealthy individuals tend to skirt tax obligations, which should decrease impressions that all tax contributors are treated equally.

To begin with, the figure below displays the effects on the two items used to capture general exposure to the treatment. The results show that the treatment reduced perceptions of tax avoidance among large corporations, which were absent in the media revelations and subsequent scandals of the Panama Papers exposure. This effect is only significant among more politically sophisticated respondents, as would be expected assuming that sophistication proxies for exposure to political information in the media.

Average effects of treatment and marginal differences by subgroup

One month treatment window, entropy balance matching specification



The other outcome also displays significant effects, albeit in the opposite direction of our prior expectation. The Panama Papers, along with the corruption and tax scandals that ensued in France, seemingly significantly increased the perception that all citizens are treated equally by French tax authorities, regardless of their standing in society. In light of our prior discussion it is difficult to rationalize this finding. As such, treating this as a ''manipulation check", some caution is required in interpreting our results. At the very least, as we discuss in the main paper, it seems warranted to view the treatment of the Panama Papers disclosure in France, as seen from a one month window after the disclosures, as a compounded treatment, which includes both the original disclosures and the subsequent government reactions.

As the analyses, the manipulation check results are fairly consistent across additional subgroup analyses and robustness tests. If anything, the results are stronger for high sophisticates, which is consistent with the interpretation of these results are indicating post-treatment shifts in beliefs as a result of the Panama Papers disclosures and the political reactions they unleashed in France.

4.1 Regression Results

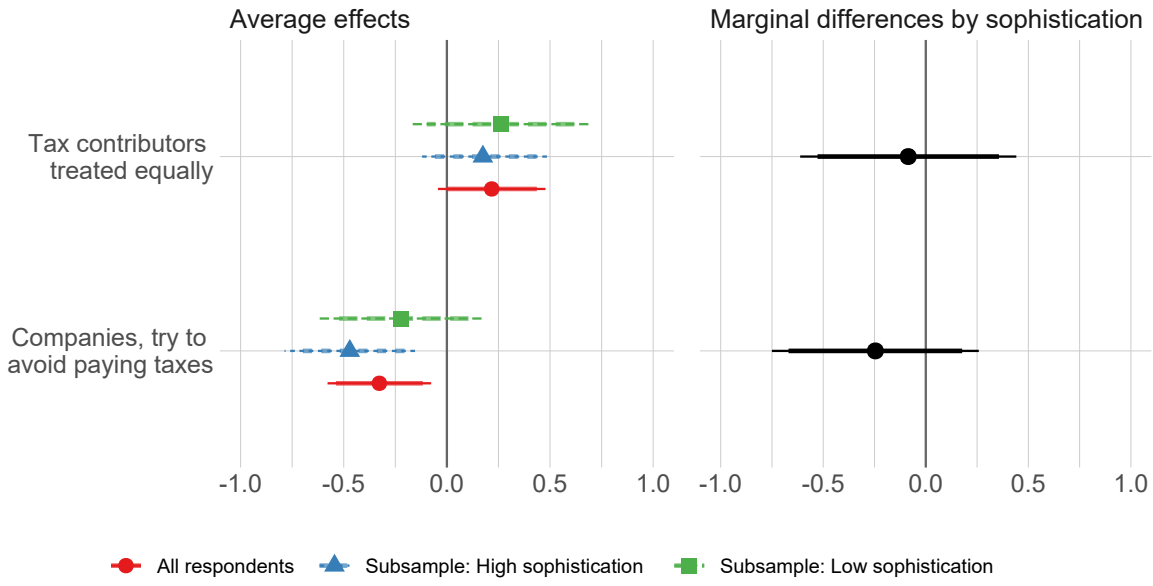
	(1) Eq. treat	(2) Eq treat	(3) Comp. avoid	(4) Comp. avoid
Treatment	0.28*	0.30	-0.39*	-0.28
	(0.14)	(0.23)	(0.13)	(0.21)
Pol. Sophistication Indicator		0.05		0.37*
		(0.18)		(0.17)
Treatment x Pol. Sophistication		-0.03		-0.27
		(0.28)		(0.27)
Observations	333	331	342	340

OLS regression estimates calculated with entropy balancing weights.
DV in models 1-2: Tax authorities treat tax contributors equally, models 3-4: Companies try to avoid paying taxes. + p<0.1, * p<0.05.

4.1.1 Bivariate Regression of Manipulation Check Outcomes on Treatment Indicator (No Matching)

Average effects of treatment and marginal differences by subgroup

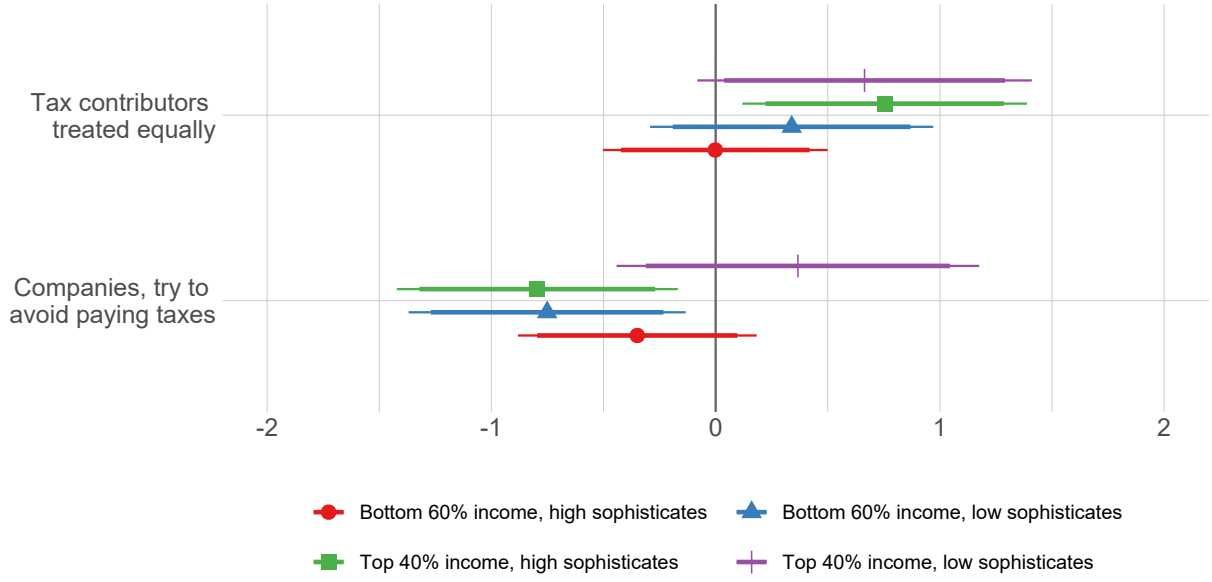
One month treatment window, bivariate specification



4.1.2 Regression of Outcome on Treatment Indicator and Income Moderator

Average effects of treatment by subgroup

One month treatment window, entropy balance matching specification



4.1.3 Regression of Outcome on Treatment Indicator and Socialist Moderator