

Social Gaps, Perceived Inequality and Protests

Olivier B. Bargain, Xavier H. Jara & David Rivera Gonzalez

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1. Introduction / motivation

- Latent feelings of [social decline & economic insecurity](#) fuel political change: Evidenced through factors leading to radical/populist vote, e.g. downgrading and economic insecurity due to globalization: [Autor et al 2020](#); due to austerity: [Fetzer, 2019](#), [Baccini and Sattler 2024](#), [Justino et al, 2023](#); or a combination: [Algan et al, 2017](#), [Bossert et al, 2023](#), [Guiso et al 2024](#))

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- Often, literature tries to establish the role of *actual* inequality :Mixed or reversed results (e.g., [Dubrow et al, 2008](#), [Solt, 2015](#)) Even if it must play a role in the response (France: regional disparities; Chile: high inequality rooted in neoliberal policies since Pinochet era)

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- Often, literature tries to establish the role of *actual* inequality :Mixed or reversed results (e.g., Dubrow et al, 2008, Solt, 2015) Even if it must play a role in the response (France: regional disparities; Chile: high inequality rooted in neoliberal policies since Pinochet era)
- Yet, the LA case shows the difficulty of grasping social mechanisms with income inequality dynamics (Solt, 2008):
 - The 2019 events follow 20 years of *declining inequality*, ... but social frustration possibly from equalization progress felt incomplete and insufficient, with oligarchic social contract preserving inequality of opportunity (cf. Ferreira and Schoch, 2020)
 - International studies (e.g. Bussolo et al., 2021) and LA studies (e.g., Justino and Martorano 2016/2019) point to the role of *distributional belief* rather than actual inequality

1. Introduction / motivation (what we do)

- This motivates our study : objective measures not enough, also leverage **subjective information**
 - Exploiting data collected in 2018 and just after 2019 protests, including:
 - alternative measures of **protests**
 - proxies for determinants, incl. a '**social gap**' **measure** that we construct as difference between objective & subjective social status
 - **objective status**: income, occupation, or a composite indicator
 - **subjective status** : perception of one's social rank
- These results are not causal, as variations in the social gap may stem from unobserved factors that simultaneously influence protest behavior. We rather aim to characterize the mass mobilization of 2019.

1. Introduction / results overview

- i. Our results begin by outlining the characteristics of the protesters.
 - Bulk of protesters are in middle/upper middle class (but not in top 1%) ... hence, income or perceived position explain little
 - However, more explanatory power with our **(lagged) social gap**: translating tension between objective and subjective position, social frustration act as a catalyst of protest
 - protest increases with the initial level of the social gap AND with widening of this gap

- ii. Even after controlling for 'other' key factors
 - **Peers' participation to protests**
 - **Other self-interest dimension: perceived life cost & perceived value of public services**
 - **Social preferences : perceived unfairness & political views (democracy, corruption)**

→ We show that **status misperceptions operate independently and they are not a mere component of redistributive preferences**

2. Context

2019 Protests

6th Oct: hike in the price of the metro ticket in Santiago

Widespread fare evasion, rapidly overflowing to violent confrontations / state of emergency declared

student movement expanded into broader outcry against persistent inequality, sense of social decline amid unjust political/economic systems, rising living costs, limited public services (either privatized or low-quality), unmet democratic expectations, etc. (Cox et al 2024)

Several weeks of uninterrupted and widespread protests nationwide (36 deaths, 11,564 injuries)

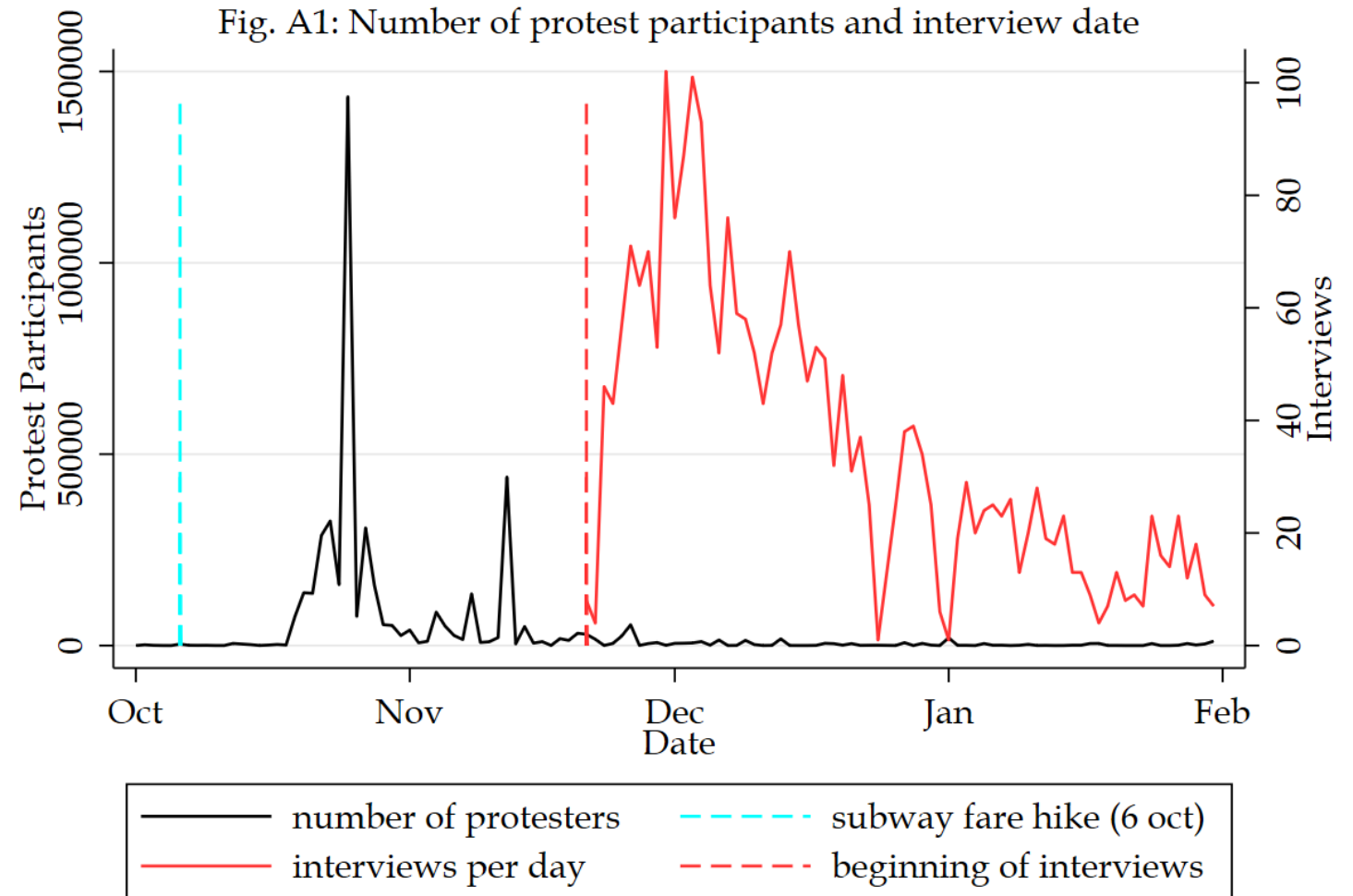
25th Oct: 1.2 million people demonstrating in Santiago + more in other cities up and down the country

Protest levels strongly receded in terms of participants thereafter



3. Empirical approach / data

- Nationally representative longitudinal data ELSOC
 - Used in Bautista et al. (2019) & Bourret Soto (2024) to assess correlation between past repression and recent democratic outcomes or trust in institutions
- Sample
 - Chilean or foreign, aged 15-75 years old
 - 40 cities (92 communes) of the 13 regions of Chile
- We focus on 2019 protests
- Interviews just after main events



Note: ELSOC data is merged with 'COES Protest Events Dataset'

3. Empirical approach / data

Subjective measure: perceived position:

- highly concentrated around 3-4-5 tendency of misperceptions toward the center ('centre bias': Cruces et al., 2013),... used to explain vote, redistributive preferences.
- With such concentration, not expected to explain much (but the gap to actual ranks might)

→ Construction of '**social decline**' index = **actual rank** - perceived rank

with **actual rank** proxied by a 1-10 scale corresponding to either:

- income deciles,
- occupational prestige (EGP scale)
- or a composite one with education (Adler et al. 1994)

→ Captures the tension between where you are and where you think you are : large positive/negative values reflect under/overestimated actual position

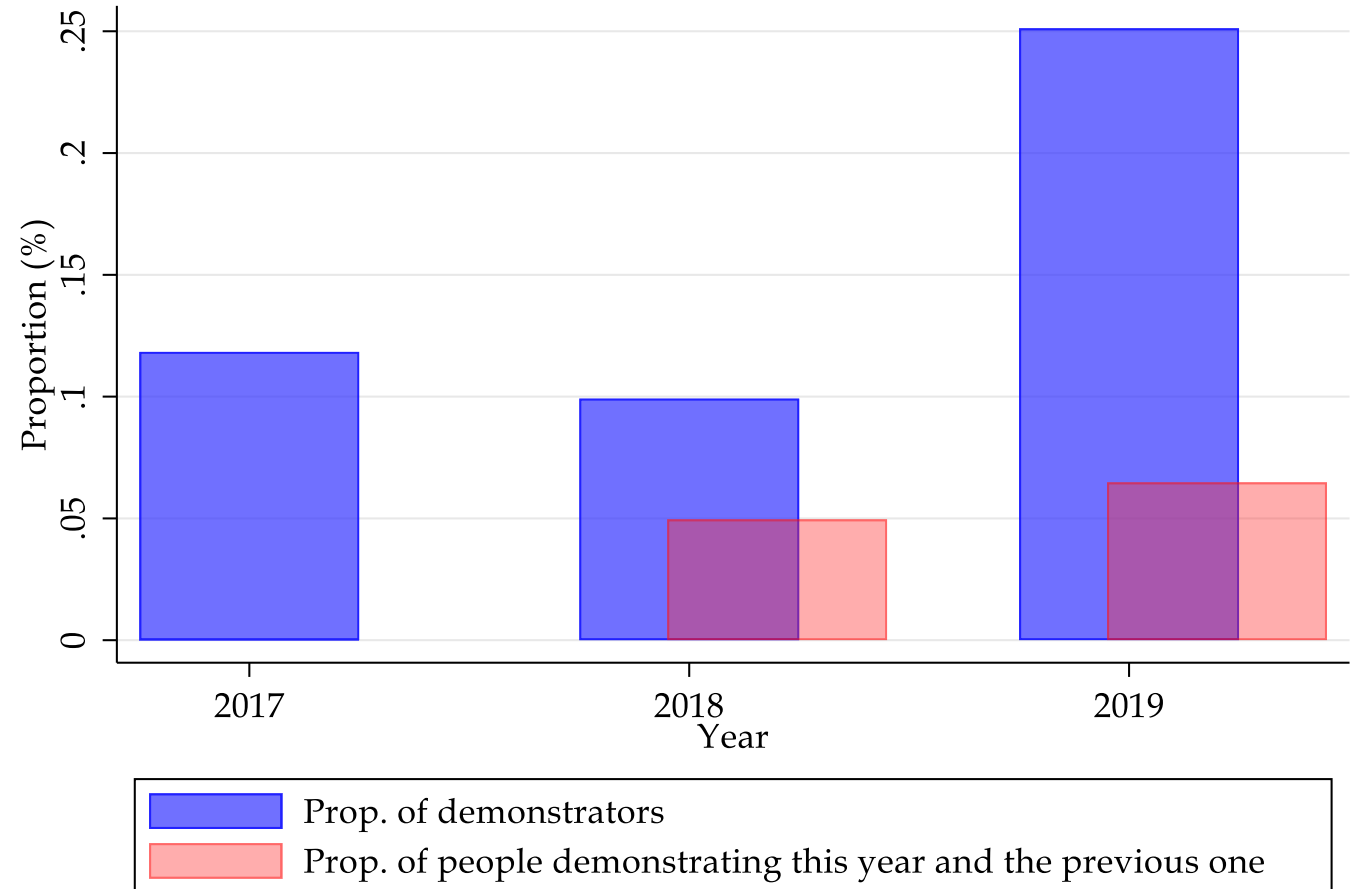
Note: 0 not meaningful, as the perception of a 'median' subjective status may not coincide with a median income or occupation status

3. Empirical approach / data

Outcome variables

- **Protest participation:** binary and yearly intensity (The bulk of 2019-protesters are 'new ones')
- Alternative social unrest: soft (fighting on social media), intermediate (saucepan banging), strong (tolerance for violence)
- Alternative outcome: past voting & future intentions of vote

Fig.1: Proportion of demonstrators in the panel



3. Empirical approach

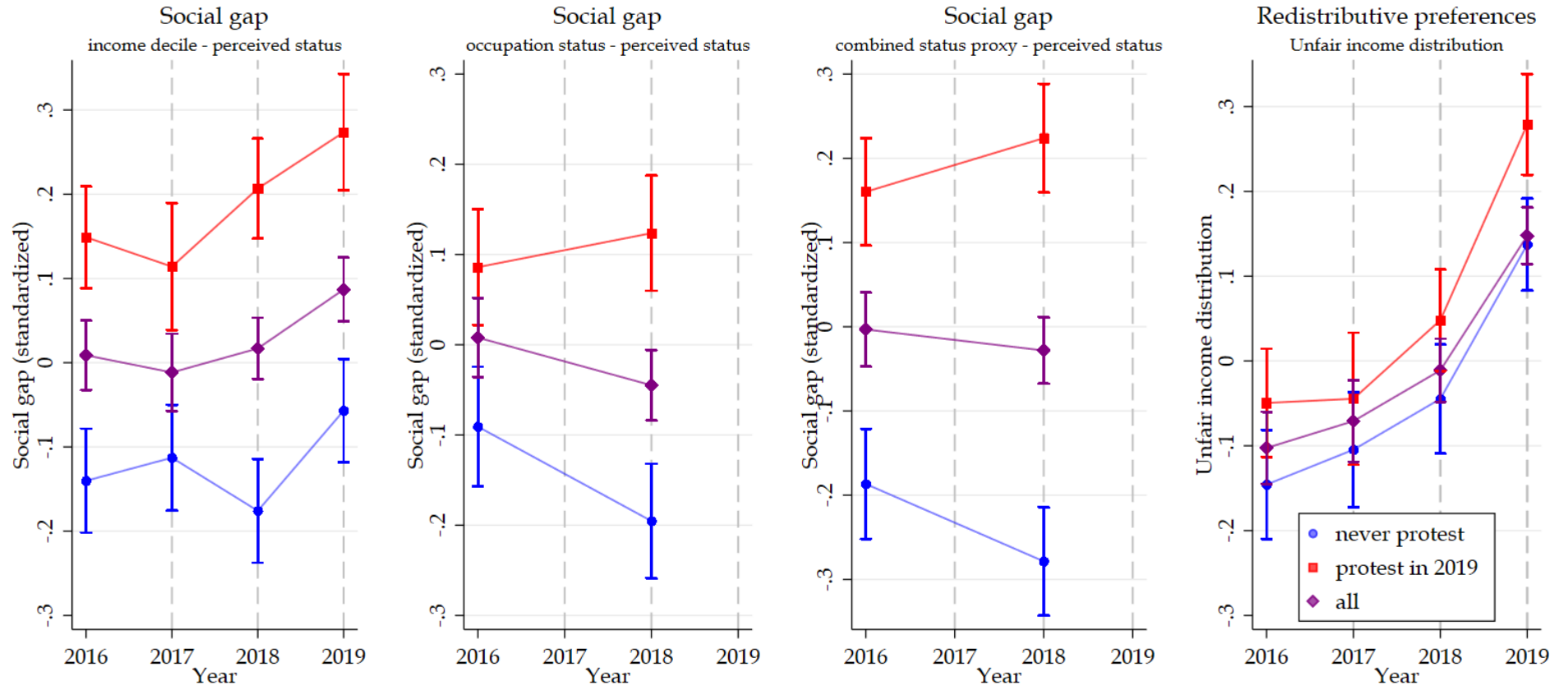
Positional gap

- For those who never protest: gap lower and flat/decline trend
- Rising for protesters

Redistributive preferences

- All groups show upward trends (more marked for protester)

Fig.1: Trends in social gap and redistributive preferences



The graphs show annual means for social gaps and unfairness view. All variables are standardized. 95% confidence bounds are represented.

3. Empirical approach / model

2019 protest participation as a function of the (lagged) social gap.

$$Protest_{i,2019} = \alpha + \beta Gap_{i,2018} + \mathbf{X}'_i \boldsymbol{\gamma} + \varepsilon_i \quad (1)$$

- ***Protest*_{*i*,2019}** denoting the binary protest variable (equal to 1 if individual *i* participated in protests at least once during year 2019, and 0 otherwise)
- ***Gap*_{*i*,2018}** the lagged social gap. Not contemporaneous (=post-protest), since protest exposure may change perceptions (eg. Madestam et al., 2013)
- We include a set of controls ***X*_{*i*}**, comprising socio-demographic variables (gender, age, education, married, region of residence), household income and broad employment variables (unemployed, informal worker, with formal worker or inactive as reference group).

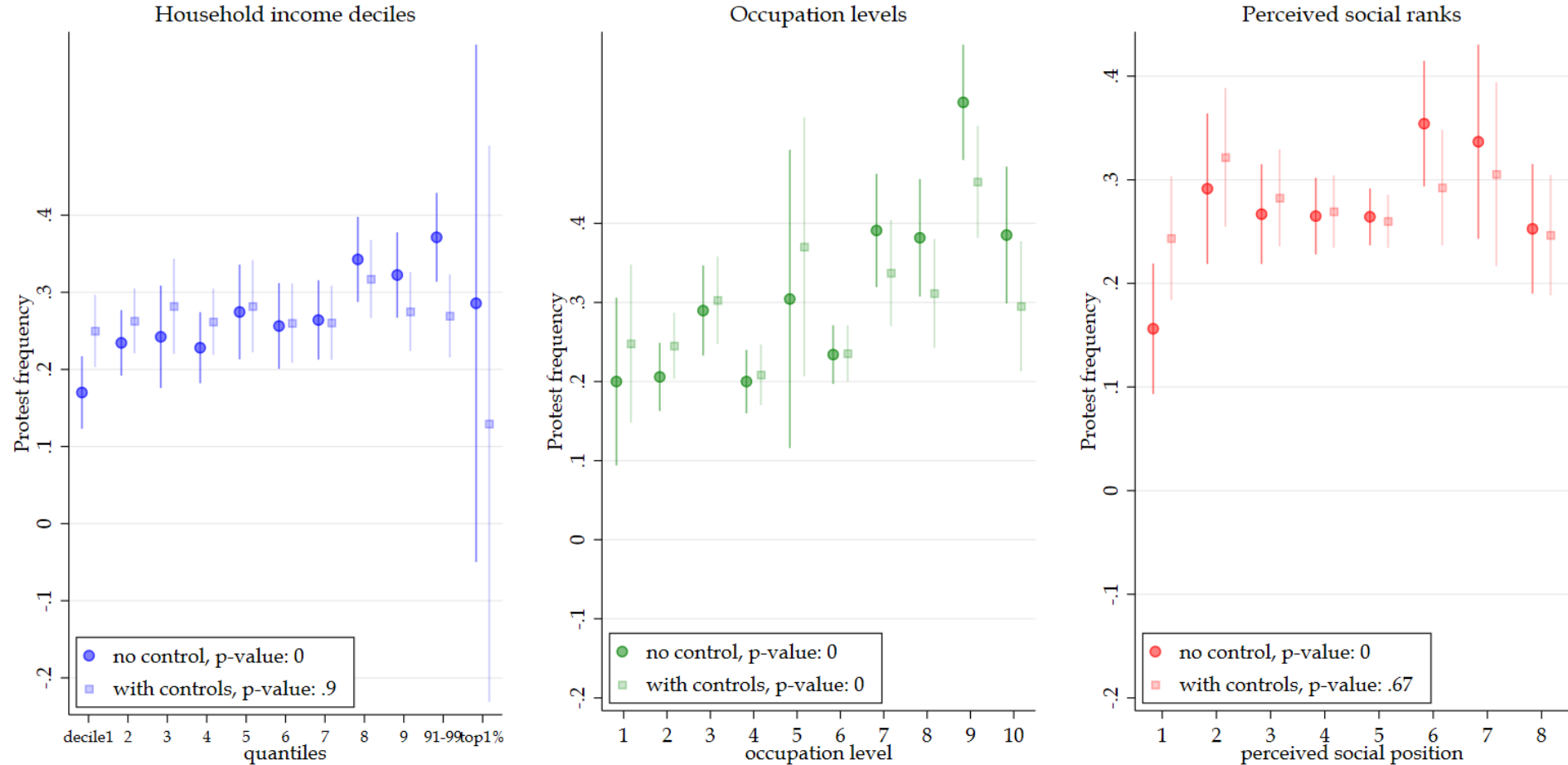
4.1 Results / where are the protesters?

I-Naive flexible results

- Congruence of all dimensions confirming that poor have lower rates of political participation
- Not only with 'objective' but also 'subjective' status
- Not exactly monotonically (top decreases)

II- Pattern less pronounced with controls and jointly non-significant

Fig.2: Non-parametric estimations of protest on income ranks, occupation ranks or perceived ranks



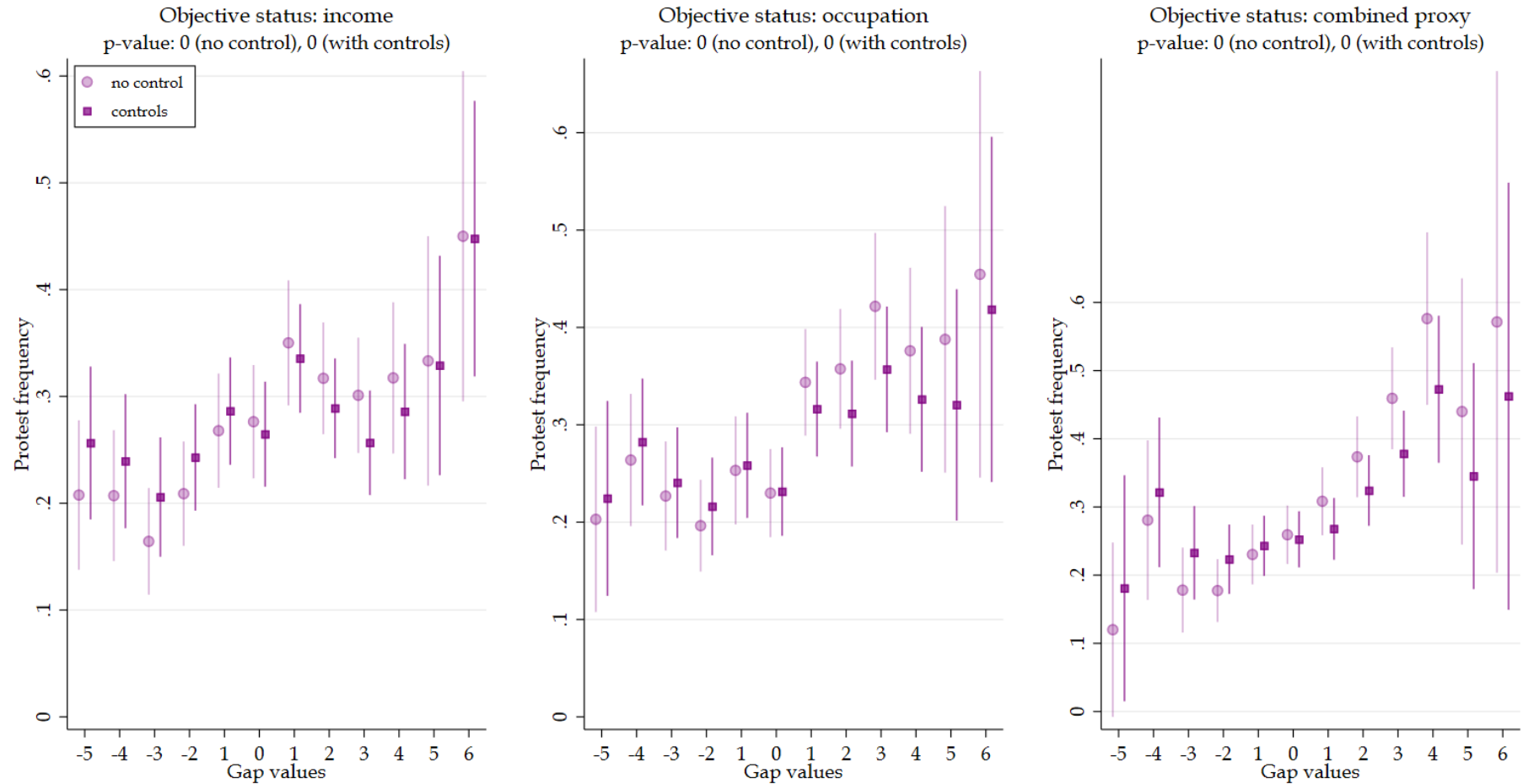
Estimation of individual protest on dummies for income decile, occupation level or perceived position. The legend reports p-value of joint significance of these sets of dummies, with or without controls (controls include standard socio-demographic variables and linear income).

4.1 Results / where are the protesters?

flexible estimations

- estimated coefficients across all social gap levels,
- clear upward pattern, with joint p-values=0
- True even after accounting for controls

Fig. 3: Non-parametric estimations of protest on social gap levels



Estimation of individual protest dummy on social gap levels (-5 to 6), using alternative definitions (objective status: income deciles, occupation ranks or combine index). Estimations with controls include: standard socio-demographic variables and linear income.

4.2 Results / baseline

- Baseline: linear model with standard controls (incl. income)
- With income deciles: a 1 sd increase in standardized gap (=increase of 1) yields a 3.6-5.6 ppt increase in protest frequency, ie. **a rise of 12-19% of mean protest**
- In % of s.d.: 8% to 12%

Note: similar significant results using a log gap specifications

Dep. var.:	Baseline		
	2019 Protest dummy		
Objective status used for social gap:	Income	Occupation	Composite
	(1)	(1')	(1'')
Social gap, 2018	0.036*** (0.011)	0.039*** (0.010)	0.056*** (0.010)
Relative effects of:	+1 s.d. in 2018 social gap		
in % of protest mean	12%	14%	19%
in % of protest std. dev.	8%	9%	12%
Protest: mean	0.29	0.29	0.29
Protest: std. dev.	0.45	0.45	0.45
# obs	2105	2105	2105
R2	0.122	0.124	0.130
Adj. R2	0.113	0.115	0.120

Note: all estimation control for socio-demographics (male, age, married, education, indigenous), household income, work status, and region. For models 1-1'', we use a common sample (i.e. observations for which income, occupation and perceived ranks are available) for the sake of comparability. Robust standard errors clustered at individual level and indicated in parentheses. Significance levels indicated as: *** p<0.01, ** p<0.05, * p<0.1.

4.2 Results / dynamics

- Dynamics results similar for all social gap definitions
- level of gap in 2017/16 contributes to 2019 protest,
 - and increment in gap reinforces protest probability
- Consistent with average dynamics of Fig 1

Dep. var.:	Dynamics			
	2019 Protest dummy			
	Income	Income	Occupation	Composite
Objective status used for social gap:	(2)	(2')	(2'')	(2''')
Social gap, 2017	0.041*** (0.016)			
Change in Social gap 2017-18	0.027* (0.014)			
Social gap, 2016		0.051*** (0.016)	0.031* (0.016)	0.074*** (0.018)
Change in Social gap, 2016-18		0.029** (0.014)	0.045*** (0.015)	0.061*** (0.017)
Relative effects of:	+1 s.d. in social gaps of both years			
in % of protest mean	14%	18%	11%	26%
in % of protest std. dev.	9%	11%	7%	16%
Protest: mean	0.29	0.29	0.29	0.29
Protest: std. dev.	0.45	0.45	0.45	0.45
# obs	1386	1427	1226	1128
R2	0.153	0.145	0.136	0.143
Adj. R2	0.139	0.131	0.119	0.125

Note: all estimation control for socio-demographics (male, age, married, education, indigenous), household income, work status, and region. For models 1-1'', we use a common sample (i.e. observations for which income, occupation and perceived ranks are available) for the sake of comparability. Robust standard errors clustered at individual level and indicated in parentheses. Significance levels indicated as: *** p<0.01, ** p<0.05, * p<0.1.

4.2 Results / panel fixed effects

- Fixed effects (FE) panel estimations may be less informative in our framework, as they are better suited to recurrent behaviors
- Our main analysis focuses on the massive 2019 protests, which involved about 29% of the sample, unlike earlier years with fewer
- However incorporating individual fixed effects accounts for unobserved heterogeneity
- 2016-2019 protest rate smaller (17%), so relative effects are similar to the baseline, namely 12%-16% of protest mean across models.

	Panel FE regression		
Dep. var.:	Protest dummy, all years		
Objective status used for social gap:	Income	Occupation	Composite
	(3)	(3')	(3'')
Social gap	0.020*** (0.006)	0.027** (0.011)	0.025* (0.013)
Relative effects of:	+1 s.d. in social gap		
in % of protest mean	12%	16%	15%
in % of protest std. dev.	5%	7%	7%
Protest: mean	0.17	0.17	0.17
Protest: std. dev.	0.37	0.37	0.37
# obs	8858	2518	2516
R2	0.533	0.652	0.651
Adj. R2	n.a.	n.a.	n.a.

Note: all estimation control for socio-demographics (male, age, married, education, indigenous), household income, work status, and region. For models 1-1'', we use a common sample (i.e. observations for which income, occupation and perceived ranks are available) for the sake of comparability. Robust standard errors clustered at individual level and indicated in parentheses. Significance levels indicated as: *** p<0.01, ** p<0.05, * p<0.1.

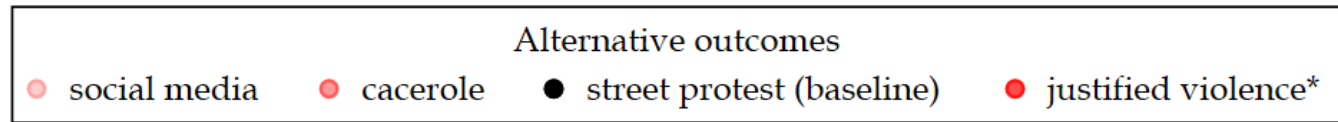
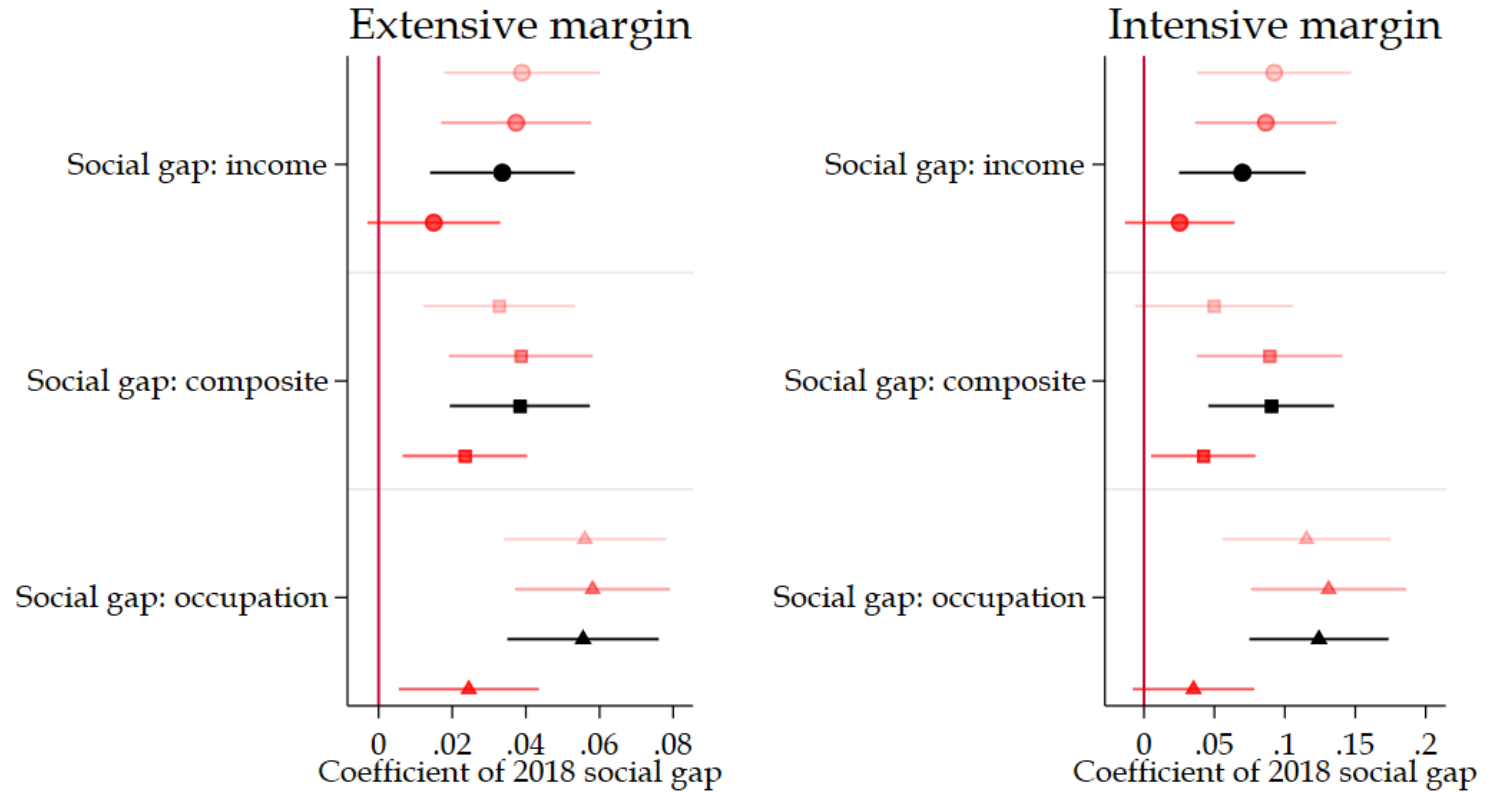
4.3 / Initial Robustness checks and Alternative outcomes

- **Alternative Outcomes.**

4.3 Results / alternative outcomes

- Similar effect for alternative outcomes softer forms of protests (ex: social media)
- Less so for violence justification
- Very similar results with **intensity margins** (ex: number of protests, for the baseline)

Fig. 4: Estimations for alternative protest outcomes



*Violence justified against public transport infrastructure. Extensive margins denote individual binary variables (for protesting through social media, banging 'cacerole', taking part in street protest, or thinking that violence is justified). Intensive margins correspond to the number of protest occurrences of each type.

4.3 / Initial Robustness checks and Alternative outcomes

- **Alternative Outcomes.**
- **Initial Robustness checks**
 - **Sensitivity to Controls.** for example, income may decline as a result of participating in protests. To address this concern, we replicate our estimations using lagged versions for time-varying controls.

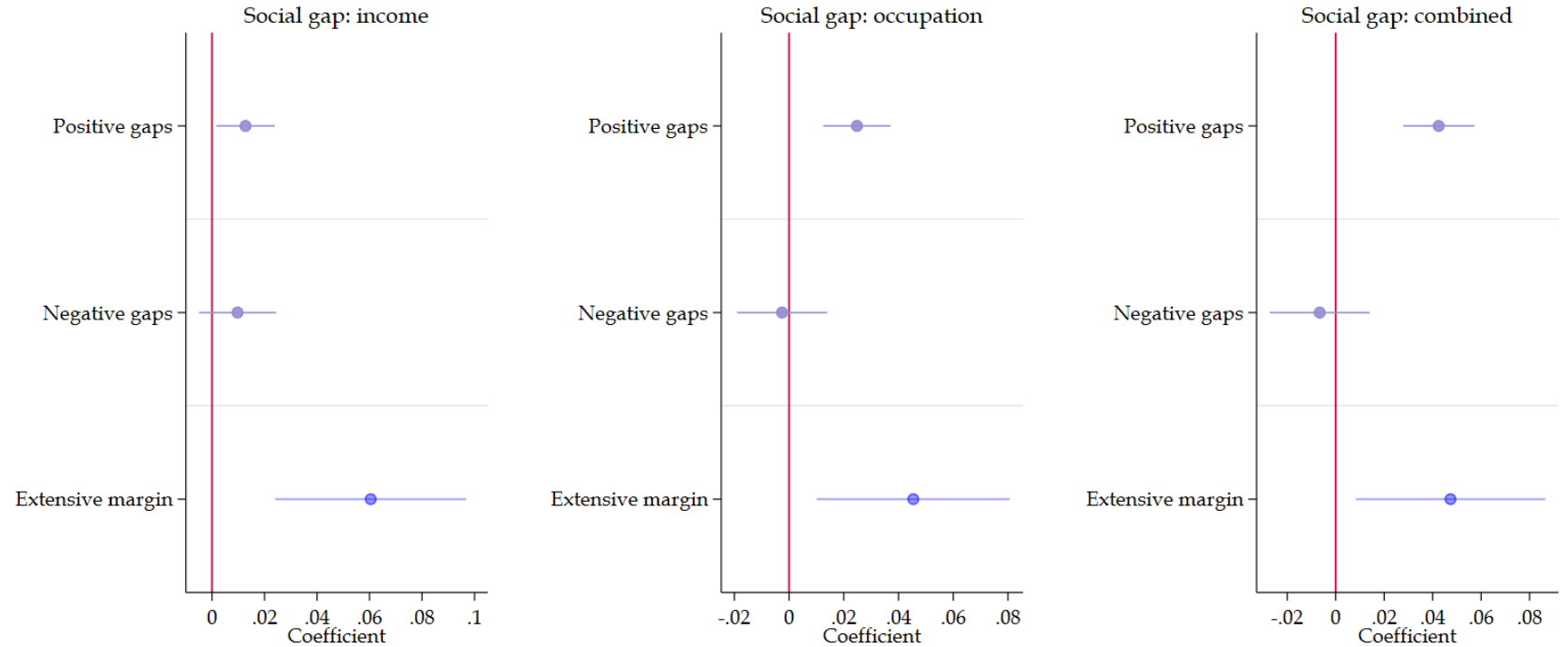
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- **Initial Robustness checks**
 - **Sensitivity to Controls.** for example, income may decline as a result of participating in protests. To address this concern, we replicate our estimations using lagged versions for time-varying controls.
- **Heterogeneous effects on protest:**
 - **Positive and negative gaps:** effect driven by intensive and extensive margin
 - **Individual characteristics:** social gap is a predictor of protest across the board

4.3 Results / heterogeneity

- Effect driven by social gap variable among those ‘underestimating’ their life standards + by difference between them and the ‘overestimating’ (no significant effect within the last group alone)

Fig. 5a: Heterogeneous effects on protest frequency: negative and positive gaps

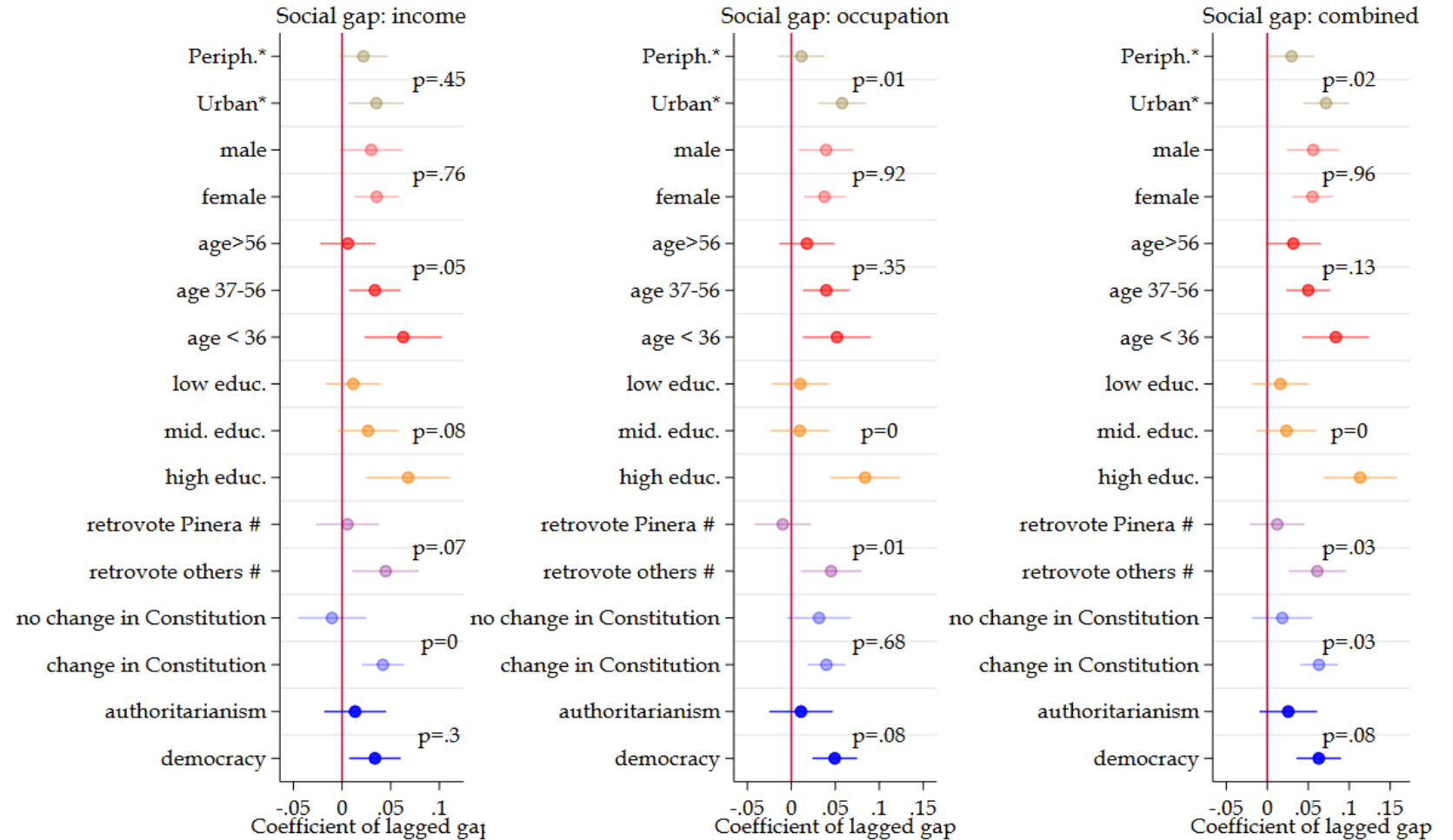


Heterogeneity analysis: estimation on protest on positive versus negative social gaps; extensive margin denotes a dummy for the positive gap group. Bars represent the 95% confidence intervals.

4.3 Results / heterogeneity

- In addition, graph summarizes other forms of **heterogeneity**
- Some expected differences (political orientation)
 - Age: significant not only for younger tier
 - Similar with other social gap definitions (but gender or geogr. differences do not hold)

Fig. 5: Heterogeneous effects on protest frequency



*Periph.: peripheral households, defined as living at above median distance to regional capital (as opposed to urban: below-median)
 #Retovote question about last election (Pinera: conservative party, opposed to 'others' including mainly left parties).

4.3 Additional Results / key factors

- Holds when adding key factors
 - Public services valuation or Anger at life cost
 - Other relativities in behavior: peer effects
 - Alternative measures of inequality/unfairness views
 - Social gap effect decreases but still highly significant when controlling for political views

Objective proxy for social gap:	Baseline (other determinants lagged)		
	Income	Occupation	Composite
Social gap (lagged)	0.026*** (0.010)	0.027*** (0.010)	0.039*** (0.011)
Public good valuation	-0.028 (0.022)	-0.027 (0.030)	-0.028 (0.030)
Anger at life cost	0.046*** (0.011)	0.075*** (0.011)	0.072*** (0.011)
Peers: friends or family protest	0.172*** (0.016)	0.185*** (0.018)	0.185*** (0.018)
Combined unfair/inequality	0.034*** (0.008)	0.023** (0.010)	0.021** (0.010)
Support democracy	0.094*** (0.018)	0.087*** (0.019)	0.083*** (0.020)
Corruption issue	0.061** (0.030)	0.094*** (0.034)	0.093*** (0.034)
# obs	2322	2082	2011
R2	0.172	0.174	0.178
Adj. R2	0.166	0.168	0.172

Note: controls include socio-demographics (male, age, married, education, indigenous), household income, work status, and region. Robust standard errors clustered at individual level and indicated in parentheses. Significance levels indicated as: *** p<0.01, ** p<0.05, *

4.4 / Additional Robustness Checks

- **Additional Robustness Checks**
 - Adding Perception Dynamics.
 - Psychological Traits and Subjective Well-Being.
 - Hardliners/*Always* Protesters.

5. Conclusion and results overview

- We offer insights into the determinants of major protests in Chile.
- First, we confirm that the probability of protesting increases with socio-economic status, measured by household income or occupational level.
- we challenge conventional perspectives that focus solely on relative income or income inequality as predictors of protest behavior.
- We analyze the dynamics preceding the events and identify a cumulative effect: protest propensity increases not only with the initial level of the social gap but also with any widening of this gap in the lead-up to the protests.
- Perceived position *relative to actual one* matters for participation to major social protest in Chile ,even after controlling for 'other' oriented variables:
 - Peers' participation to protests / Other self-interest dimension: perceived life cost & perceived value of public services/ Social preferences : perceived unfairness & political views (democracy, corruption)
- We show in particular that **social gap not just a mere component of redistributive preferences and political views**. Ultimately, this research underscores the importance of leveraging subjective perceptions alongside objective socio-economic indicators to explain collective action.

Thank you ! For any queries:
david.rivera-gonzalez@u-bordeaux.fr

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Appendix

3. Empirical approach / model

Estimations for t=2019 of:

$$Protest_{it} = \beta_0 + \beta_1 Gap_{it-1} + \beta_2' X_{it} + \beta_3 Lifecosts_{it1} + \beta_4 Peers_{it} + \beta_5 SocPref_{it1}$$

Additional controls:

- Self-rate position may reflect on the perception of my permanent income, the value of my future opportunities, or what I can achieve, incl. **cost of living & perceived value of public services**
- Implicit social comparisons to reference groups in Social Gap... but also in behaviors, hence control for whether **peers** take part in protest
- We also test if Gap is just a driver of **SocPref** (contextual inequality aversion / unfairness / redistributive claim & political views : democracy + corruption) or has an independent role

1. Intro / contributions (1)

First, we contribute to growing literature on **what triggers social unrest & conflicts:**

- In poor settings (Africa): overflowing feeling of inequality (often between ethnicities or social classes) following events that generate economic disruption and income shocks, e.g. **climate shocks: Harari & La Ferrara 2018, epidemics: Cervellati et al 2021, commodity prices: Berman & Couttenier, 2015.**
 - In richer or **middle-income countries:** different sparks reveal various forms of underlying discontent; 'unfair' policies (e.g., subway fare hikes in Chile, canceled fuel subsidies in Ecuador, etc.) felt as breaking points amid more general unfairness feelings (vis-à-vis top incomes, democratic deficits, living standards, etc.)
 - Limited evidence on **LA protests**, focusing on
 - unfairness feeling, associated with activism (particularly in social media: **Reyes and Gasparini, 2022**)
 - the role of redistributive preferences (**Justino and Martorano, 2019**) / closest to us, the latter study emphasizes the mediating role of perceptions regarding public services, living standards & corruption
- We **disentangle these different dimensions**, emphasizing on the role of self-interest, through **social frustration**

1. Intro / contributions (2)

- **Second**, very limited literature looking specifically at **perceived position relative to actual position** when explaining protests
 - Some studies in sociology and social psychology on **objective income position** and political activism/participation (Fransman and von Fintel, 2024) or protests (Grant and Brown, 1995, Grasso & Giugni 2016)
 - Studies on the lower political participation of the ‘objective’ poor (e.g. Brady et al., 1995 ; Solt 2008; Schlozman et al. 2012; Haushofer and Fehr, 2014; Erikson 2015; Kraus et al., 2015)
 - structural barriers (e.g., lack of resources, education, and time) and lower social integration into networks
- ... but *subjective relative deprivation* matters (Ravallion, 2015), which contributes to explain lower activism among the poor (central-biased) and higher protests among middle-class (Grasso et al 2019)
- We confirm low participation among poor, also because they feel ‘central’, while more protest among those in the upper-middle/middle class who feel lower

1. Intro / contributions (3)

Third, we contribute to a broader literature linking **individual relative status and other relevant outcomes**:

- **Subjective well-being**

- Association between relative status and SWB (e.g. Ferrer-i-Carbonell, 2005; Ravallion and Lokshin 2010; Perez-Truglia, 2020) : stronger if subjective, rather than objective, status (Tan et al. 2020)
- Challenges surrounding the identification of the comparison group (Clark and Senik 2010)
- Mediating role of SWB for protest (Witte al. 2020)

- Subjective relative status also shape feelings of **unfairness...**

- ...and, in turn, **redistributive preferences** (e.g. Kuziemko et al., 2014; Fisman et al. 2020; Hvidberg et al 2021)

- Our results are consistent with studies on redistributive preferences that **manipulate perceptions experimentally**

Lower-income individuals underestimate their rank and, if made aware of it, increase their support for redistribution (Cruces et al 2013, Argentina; Hvidberg et al 2021, Denmark; Hoy and Mager 2021, 10 countries; Albacete et al 2022, Austria, wealth ineq/tax). Somewhat symmetrically, those who's relative position improves decrease support (Karadja et al 2017, Sweden).

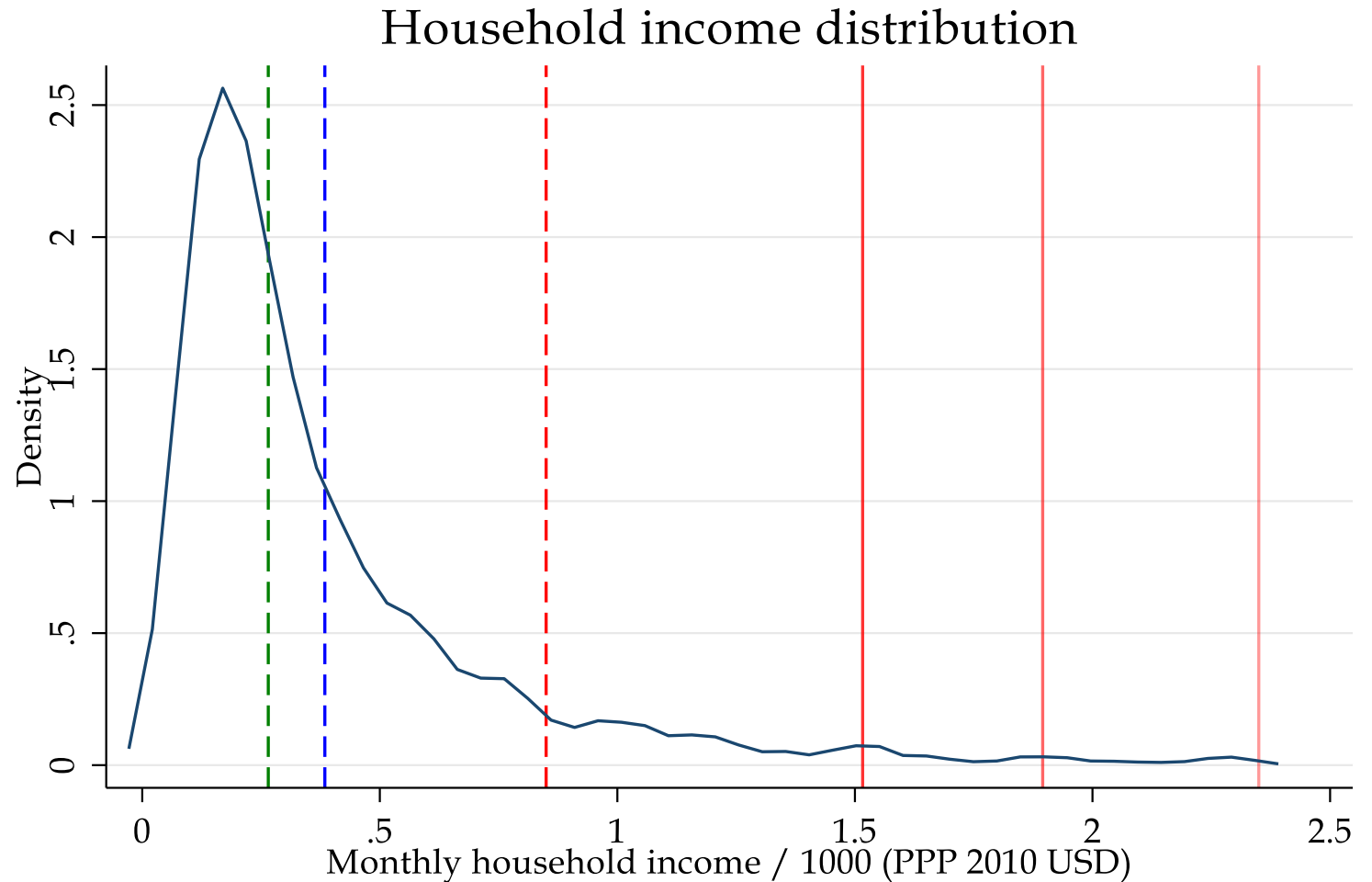
3. Empirical approach / data attrition table A1

Year	Original Sample	Attrition	Refresh Sample	Attrition
	(1)	(2)	(3)	(4)
2016	2927			
2017	2473	15.50%		
2018	2229	9.90%	1519	
2019	2153	3.40%	1264	16.80%

note: Rate of attrition in data taken from ELSOC manual at <https://methodological-manual-elsoc.netlify.app/attrition>. An original nationally representative sample was taken in 2016 with a complimentary update sample added in 2018

Appendix: income distribution

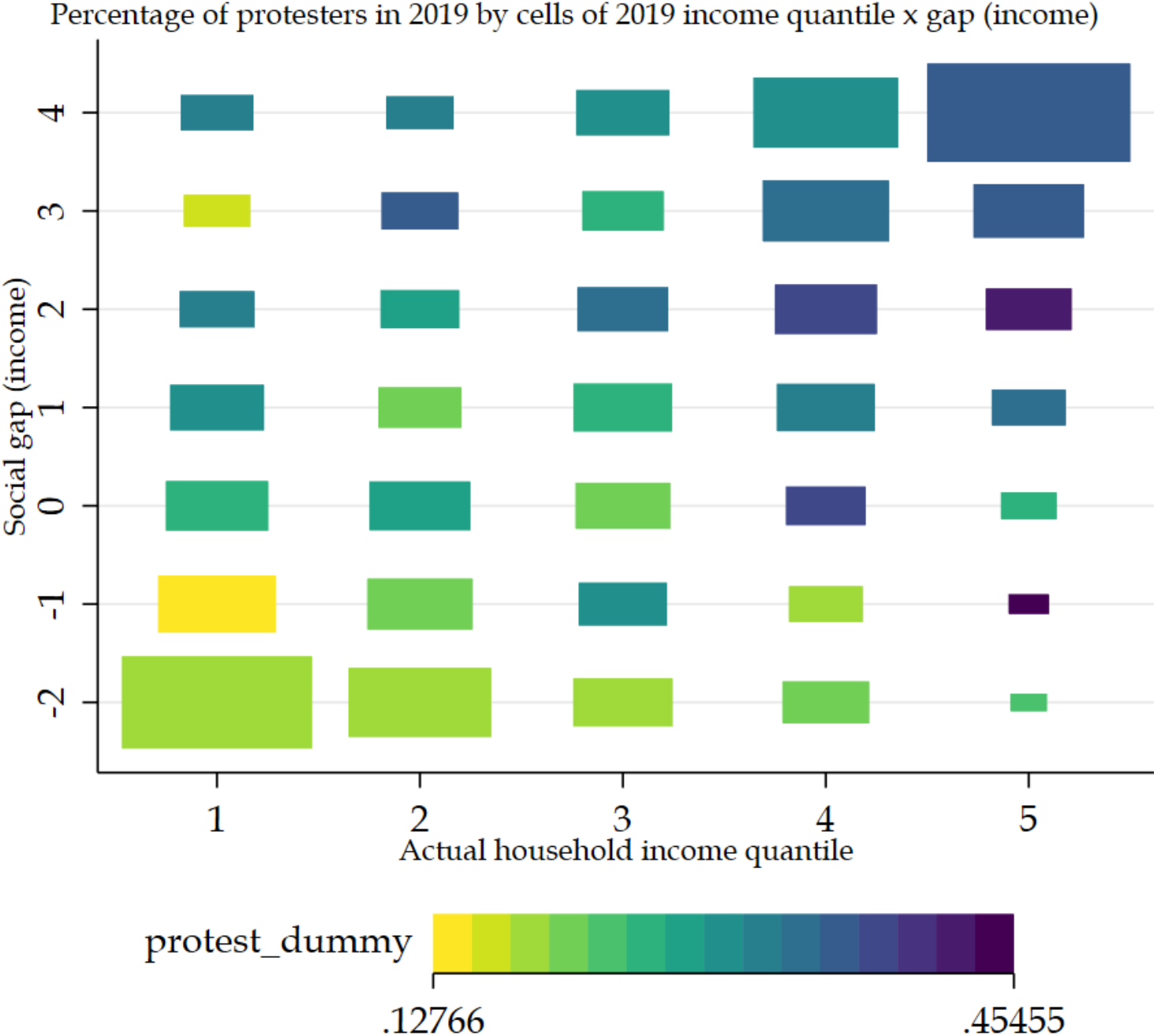
- Large middle class
- Very rich (underrepresented) above the lower bound of the top 1%



The dashed green (blue) line indicates median (mean) household income, the dashed red the lower bound of the 10th decile, the shaded solid red lines the lower bounds of the 98-100th centiles.

4.1 Results / where are the protesters (bis)

- Heat graph, grouping to avoid too small cells
- Social gap effect : at all income levels, also among the poor



4.1 Results / flexible models: tests

Dep. var: 2019 protest	Each model adds an alternative set of variables for:						
	Basic controls	Income deciles	Perceived positions	Social gaps (income)	Social gaps (occup.)	Social gaps (composite)	Decile x position interaction
	(0)	(1)	(2)	(3)	(4)	(5)	(6)
(a) Linear probability models							
Joint significance of the set of dummies for:		Decile dummies	Perceived Position dum.	Social gap dum. (income)	Social gap dum. (occup.)	Social gap dum. (composite)	Decile x position dum.
p-value		.36	.58	0	0	0	0
R2	0.118	0.123	0.125	0.134	0.135	0.135	0.155
Adj. R2	0.109	0.110	0.109	0.117	0.118	0.118	0.113
(b) Logit regressions							
Log-L. ratio test (nested models)		(1) vs (0)	(2) vs (1)	(3) vs (1)	(4) vs (1)	(5) vs (1)	(6) vs (1), vs (2)
p-value		0.35	0.39	0	0	0	0.03, 0.03
Socio-demographics	YES	YES	YES	YES	YES	YES	YES
Decile dummies	NO	YES	YES	YES	YES	YES	NO
# obs	2104	2104	2104	2104	2104	2104	2104

Note: we estimate 2019 protest using alternative specification. Controls include socio-demographics (male, age, married, education, indigenous), unemployed, informal worker, and region. For comparability and to conduct nested model tests, we use a common sample (i.e. observations for which income, occupation and perceived status are available) for all specifications. Robust standard errors clustered at individual level and indicated in parentheses. Significance levels indicated as: *** p<0.01, ** p<0.05, * p<0.1.

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Appendix

2019: Year of street protests

Street protests across the world shook the year 2019, as mass demonstrations took place against corruption, inequality, alleged election rigging, price hikes

2019



Millions of people filled the streets in **17 countries**, from **Asia** to **Europe** and from **South America** to the **Middle East**

FRANCE

Yellow Vest protests erupted in October last year, becoming one of the **longest-running anti-government movements in the country's history** against President Emmanuel Macron's controversial policies

INDIA

Protests were held in December against the country's **new citizenship law**, which granted citizenship to six religious groups from Pakistan, Afghanistan, and Bangladesh, but was changed to exclude Muslim immigrants in the same circumstances

HONG KONG

Protests in Hong Kong erupted in April after **the submission of a bill allowing the extradition of suspects in the autonomous enclave to the Chinese mainland**. Despite the withdrawal of the bill, at least **five people were killed** and **more than 5,000 detained**

EUROPE



ASIA



Appendix

