Gregory W. Saxton, Governance Quality, Fairness Perceptions, and Satisfaction with Democracy

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APPENDIX

Appendix A: Variables and Descriptive Statistics
Appendix B: Supplementary Analysis

Appendix A. Variables and Descriptive Statistics

Creating a Wealth Quintile Measure

Latinobarometer does not ask about respondents' income. Instead, I rely on another objective measure of economic status by constructing a relative wealth indicator based on household assets following Córdova (2009). In her methodological note, Córdova describes using Principal Component Analysis (PCA) to construct a wealth measure based on ownership of: 1) Television; 2) Refrigerator; 3) Landline telephone; 4) Cell phone; 5) Vehicle; 6) Washing Machine; 7) Microwave; 8) Indoor plumbing; 9) Indoor Bathroom; 10) Computer.[1] The method also accounts for urban and rural differences. As Córdova (2009, 2) explains, "We do not want to call an individual 'poor' if she lives in a rural area without water or electricity, yet owns a car, a cell phone, etc." Cordova's (2009) PCA technique was developed for use with Americas Barometer data. Fortunately, Latinobarometer also asks respondents about household assets, so I was able to use the same method, albeit on a slightly smaller number of assets. Following the exact same method as Córdova describes, I construct a relative wealth indicator using seven assets: owning a home, refrigerator, washing machine, telephone, car, running water, and hot water. I distinguish urban from rural areas with cities with more than 20,000 inhabitants. Roughly 10 percent of respondents in the sample qualify as "rural" according to this criterion.

Replication syntax is available at https://dataverse.harvard.edu/dataverse/laps

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[1] The full methodological note can be accessed here:
https://www.vanderbilt.edu/lapop/insights/I0806en_v2.pdf

Table A1. Variation in Country-Level Covariates Over Time

Country	Year	Governance Quality	Income Inequality	Party Frag.	Age of Democracy	Gov. Engagement
Argentina	2011	-0.19	40.40	3.96	28	5.58
Argentina	2013	-0.27	39.10	4.28	30	4.88
Argentina	2015	-0.31	38.40	4.34	32	4.98
Bolivia	2011	-0.51	44.00	1.85	29	6.31
Bolivia	2013	-0.55	43.80	1.85	31	6.4
Bolivia	2015	-0.57	43.10	1.91	33	6.06
Brazil	2011	0.16	45.90	10.44	26	6.46
Brazil	2013	0.06	44.90	10.44	28	6.06
Brazil	2015	-0.01	44.90	13.27	30	5.76
Chile	2011	1.30	46.80	5.65	22	7.9
Chile	2013	1.33	45.40	2.09	24	7.86
Chile	2015	1.28	44.80	2.09	26	7.77
Colombia	2011	-0.22	49.80	4.95	54	6.81
Colombia	2013	-0.20	49.60	4.95	56	6.66
Colombia	2015	-0.20	48.80	5.4	58	6.54
Costa Rica	2011	0.64	45.60	3.9	136	7.57
Costa Rica	2013	0.68	45.90	3.9	138	7.48
Costa Rica	2015	0.71	45.80	4.77	140	7.51
Dom. Rep	2011	-0.56	45.90	2.01	33	7.19
Dom. Rep	2013	-0.48	45.00	2.01	35	7.25
Dom. Rep	2015	-0.37	44.40	2.01	37	7.25
Ecuador	2011	-0.73	43.40	3.46	0	5.87
Ecuador	2013	-0.63	42.80	1.75	0	5.88
Ecuador	2015	-0.62	42.30	1.75	0	6.09
El Salvador	2011	-0.25	39.80	2.94	27	7.15
El Salvador	2013	-0.32	39.40	3.19	29	7.18
El Salvador	2015	-0.18	38.50	3.15	31	7.13
Guatemala	2011	-0.62	46.50	4.15	15	7.21
Guatemala	2013	-0.71	43.30	4.15	17	7.64
Guatemala	2015	-0.69	43.30	6.07	19	7.67
Honduras	2011	-0.73	50.90	2.3	22	7.27
Honduras	2013	-0.82	49.40	3.58	24	7.12
Honduras	2015	-0.74	47.40	3.58	26	7.34
Mexico	2011	-0.14	46.40	2.75	14	6.67
Mexico	2013	-0.12	46.20	4.14	16	6.76
Mexico	2015	-0.25	46.06	4.14	18	6.87
Nicaragua	2011	-0.76	42.70	1.79	16	7.31
Nicaragua	2013	-0.73	42.90	1.79	18	7.35
Nicaragua	2015	-0.71	42.90	1.79	20	7.28
Panama	2011	0.07	46.80	3.66	22	7.12
Panama	2013	0.05	46.40	3.66	24	7.37
Panama	2015	0.09	45.90	3.01	26	7.56
Paraguay	2011	-0.65	46.40	3.43	19	6.79
Paraguay	2013	-0.68	46.10	2.22	21	6.94

Paraguay	2015	-0.67	45.70	2.22	23	6.9
Peru	2011	-0.22	47.00	3.97	10	7.63
Peru	2013	-0.24	46.00	3.97	12	7.52
Peru	2015	-0.29	45.50	3.97	14	7.48
Uruguay	2011	0.95	38.20	2.65	26	7.38
Uruguay	2013	0.86	36.90	2.65	28	7.25
Uruguay	2015	0.92	36.30	2.65	30	7.14
Venezuela	2011	-1.22	36.90	2.04	0	3.92
Venezuela	2013	-1.25	36.60	2.04	0	3.32
Venezuela	2015	-1.41	36.20	1.87	0	2.96

Appendix B: Supplemental Analysis

## Table B1. Satisfaction with Democracy, Individual Governance Measures

	Voice & Accountability	Rule of Law	Control of Corruption	Government Effectiveness
Perceived Unfairness	-.61***	-.49***	-.52***	-.53***
	(.03)	(.04)	(.04)	(.04)
Governance Quality	.04	-.00	-.03	-.17
	(.19)	(.15)	(.14)	(.17)
Perceived Unfair X Governance	.24***	.19***	.17***	.19***
	(.06)	(.05)	(.05)	(.06)
Individual Level				
Economic Perception	.42***	.42***	.42***	.42***
	(.01)	(.01)	(.01)	(.01)
Education	-.01***	-.01***	-.01***	-.01***
	(.00)	(.00)	(.00)	(.00)
Rural	.04*	.04*	.04*	.05*
	(.03)	(.03)	(.03)	(.03)
Incumbent Approval	.80***	.80***	.80***	.80***
	(.02)	(.02)	(.02)	(.02)
Political Ideology 0-10=Right	.00	.00	.00	.00
	(.00)	(.00)	(.00)	(.00)
Subjective social class	.07***	.07***	.07***	.07***
	(.01)	(.01)	(.01)	(.01)
Wealth Quintile	.01	.01	.01	.01
	(.01)	(.01)	(.01)	(.01)
Female	-.03	-.03	-.03	-.03
	(.02)	(.02)	(.02)	(.02)
Country-Year Level				
Income Inequality	-.09***	-.10***	-.09***	-.11***
	(.02)	(.02)	(.02)	(.02)
Party Fragmentation	-.11***	-.11***	-.10***	-.09***
	(.03)	(.03)	(.03)	(.03)
Age of Democracy	.00	.00	.00*	.01**
	(.00)	(.00)	(.00)	(.00)
Government Economic Engagement	-.14	-.16*	-.12	-.07
	(.09)	(.09)	(.09)	(.09)
Variance (unfair)	.05***	.05***	.05***	.05***
	(.01)	(.01)	(.01)	(.01)
Number of Individuals	40620	40620	40620	40620
Number of Country-Years	54	54	54	54
Wald Chi²	4218.44	4239.26	4200.56	4168.55

* p<.10, ** p<.05, *** p<.01 (standard errors). Multilevel ordered logit coefficients.

Note: Results presented in the main text which use a governance quality factor variable are robust to

modeling each governance proxy separately. See Figure B1 for the marginal effect of an increase in

perceived distributive unfairness on satisfaction with democracy across the range of each

governance component.

Figure B1. Alternative Governance Measures
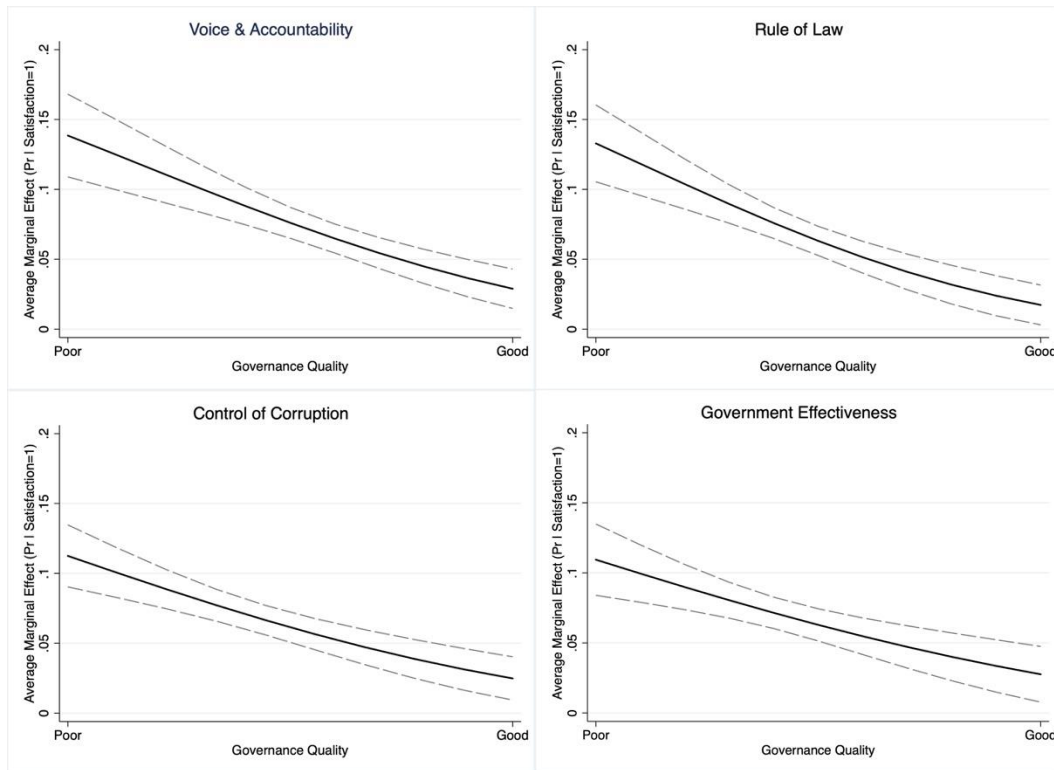
Note: Marginal effect of an increase in perceived distributive unfairness on the probability of

observing the "very dissatisfied" response outcome (coded 1). Consistent with *Hypothesis 2* and the

results in the main analysis, the relationship between perceived distributive unfairness and

dissatisfaction is weakest in a context of good governance, and strongest in a context of poor

governance. Calculated using the respective models in Appendix Table B1.

Table B2. Satisfaction with Democracy, Country-Year Level Robustness Checks

	(1)	(2)	(3)
Perceived Unfairness	-.53***	-.53***	-.53***
	(.04)	(.04)	(.04)
Governance Quality	-.21	-.07	-.16
	(.23)	(.16)	(.21)
Perceived Unfair X Governance	.21***	.21***	.21***
	(.05)	(.05)	(.05)
Individual Level			
Economic Perception (Worse)	.42***	.42***	.42***
	(.01)	(.01)	(.01)
Education	-.01***	-.01***	-.01***
	(.00)	(.00)	(.00)
Incumbent Approval	.80***	.80***	.80***
	(.02)	(.02)	(.02)
Political Ideology 0-10=Right	.00	.00	.00
	(.00)	(.00)	(.00)
Subjective Social Class	.07***	.07***	.07***
	(.01)	(.01)	(.01)
Rural	.05*	.04*	.04*
	(.03)	(.03)	(.03)
Wealth Quintile	.01	.01	.01
	(.01)	(.01)	(.01)
Female	-.03	-.03	-.03
	(.02)	(.02)	(.02)
Country-Year Level			
Income Inequality	-.10***	-.10***	-.09***
	(.02)	(.02)	(.02)
Party Fragmentation	-.11***	-.12***	-.11***
	(.03)	(.03)	(.03)
Age of Democracy	.00*	.01**	.00
	(.00)	(.00)	(.00)
Government Economic Engagement	-.06	-.16*	-.15
	(.11)	(.09)	(.09)
GNI per capita	1.46		
	(1.42)		
% Women in Legislature		-.01	
		(.01)	
Political Rights (FH)			.09
			(.10)
Variance (unfair)	.05***	.05***	.05***
	(.01)	(.01)	(.01)
Number of Individuals	40620	40620	40620
Number of Country-Years	54	54	54
Wald Chi²	4223.04	4232.02	4220.82

Note: *p<.10 ** p<.05, *** p<.01 (standard errors). Multilevel ordered logit coefficients.

The models with additional country-level controls are substantively identical to those presented in

the main analysis.

Table B3. Perceived Distributive Unfairness and Inequality by Class Identification

|	(1)	(2)	(3)
Subjective Social Class	-.20***	-.16***	-.49***
	(.01)	(.01)	(.12)
Income Inequality	.08***	.03	.01
	(.00)	(.02)	(.02)
Class X Inequality			.01***
			(.00)
Individual Level			
Political Ideology 0-10=Right		.01***	.01***
		(.00)	(.00)
Satisfaction with Democracy		-.54***	-.54***
		(.01)	(.01)
Economic Perceptions		-.35***	-.35***
		(.01)	(.01)
Education		.01***	.01***
		(.00)	(.00)
Rural		-.06**	-.06**
		(.03)	(.03)
Incumbent Approval		-.64***	-.64***
		(.02)	(.02)
Wealth Quintile		.03***	.03***
		(.01)	(.01)
Female		-.01	-.01
		(.02)	(.02)
Country-Year Level			
Party Fragmentation		.07**	.07**
		(.03)	(.03)
Age of Democracy		.00	.00
		(.00)	(.00)
Government Economic Engagement		.12*	.12
		(.07)	(.07)
Number of Individuals	56352	40620	40620
Number of Country-Years	54	54	54
Wald Chi²	1906.34	6119.63	6126.24

Note: * p<.10, ** p<.05, *** p<.01 (standard errors). Multilevel ordered logit coefficients. Model 3

includes a cross-level interaction between aggregate income inequality and subjective social class.

Since the interaction is significant, indicating that class identity *may* condition the relationship

between inequality and fairness perceptions, I plot the interaction in Appendix Figure B2.

Figure B2. Relationship between Inequality and Perceived Fairness by Class

Distribution of Perceived Distributive Unfairness

Graphs by Subjective Social Class
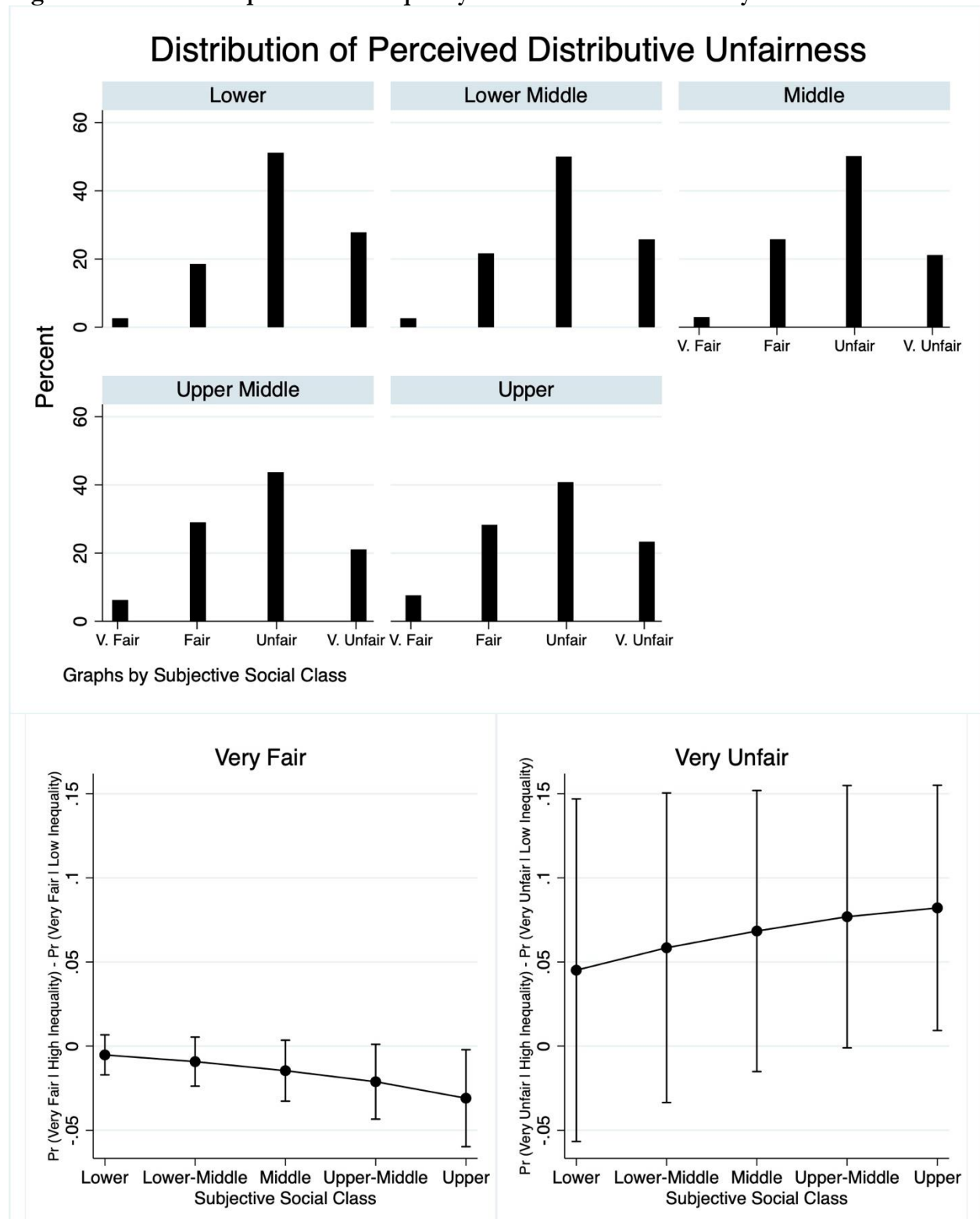
Note: The top panel in Figure B2 shows the distribution of *perceived distributive unfairness* for each self-reported social class. The bottom panel plots the difference in the probability of saying the income

distribution is "very fair" (right panel) and "very unfair" (left) at the highest and lowest levels of inequality in the sample. Estimates were calculated using the "margins contrast" command in Stata 15.1 and the results in Appendix Table B3, Model 3. These results show that in general, individuals' judgments about distributive fairness are not correlated with actual levels of inequality, although it is important to recall that inequality is high by global standards in *all* countries included in this analysis. For upper-middle and upper-class individuals, there is a slight relationship, with these people being more likely to say the distribution is "very unfair" and less likely to say it is "very fair" as inequality increases.

Table B4. Satisfaction with Democracy, Alternative Model Specifications

	Random Intercept		Three-Level	
	(1)	(2)	(3)	(4)
Perceived Distributive Unfairness	-.60***	-.54***	-.60***	-.54***
	(.01)	(.02)	(.01)	(.02)
Governance Quality	.46***	-.36**	.46***	-.36**
	(.14)	(.15)	(.14)	(.15)
Perceived Unfair X Governance		.27***		.27***
		(.02)		(.02)
Individual-Level				
Economic Perception	.43***	.42***	.43***	.42***
	(.01)	(.01)	(.01)	(.01)
Education	-.01***	-.01***	-.01***	-.01***
	(.00)	(.00)	(.00)	(.00)
Rural	.04	.05*	.04	.05*
	(.03)	(.03)	(.03)	(.03)
Incumbent Approval	.82***	.81***	.82***	.81***
	(.02)	(.02)	(.02)	(.02)
Political Ideology 0-10=Right	-.01**	-.00	-.01**	-.00
	(.00)	(.00)	(.00)	(.00)
Subjective Social Class	.07***	.07***	.07***	.07***
	(.01)	(.01)	(.01)	(.01)
Wealth Quintile	.01	.01	.01	.01
	(.01)	(.01)	(.01)	(.01)
Female	-.03	-.03	-.03	-.03
	(.02)	(.02)	(.02)	(.02)
Country-Year Level				
Income Inequality	-.09***	-.09***	-.09***	-.09***
	(.02)	(.02)	(.02)	(.02)
Party Fragmentation	-.08**	-.07**	-.08**	-.07**
	(.03)	(.03)	(.03)	(.03)
Age of Democracy	.00	.00	.00	.00
	(.00)	(.00)	(.00)	(.00)
Government Economic Engagement	.00	.02	.00	.02
	(.09)	(.09)	(.09)	(.09)
Number of Individuals	40620	40620	40620	40620
Number of Country-Years	54	54	54	54
Wald Chi²	7471.52	7617.79	7471.52	7617.79

* p<.10, ** p<.05, *** p<.01 (standard errors). Multilevel ordered logit coefficients.

Note: Results presented in the main analysis are robust to a random intercept specification, as well as estimating a three-level model. Table B4 demonstrates that the main results do not hinge on modeling choice.

Table B5. Satisfaction with Democracy, Fixed Country and Year Effects

	Country Fixed-Effects		Survey Wave Fixed-Effects	
	(1)	(2)	(3)	(4)
Perceived Distributive Unfairness	-.60***	-.54***	-.60***	-.54***
	(.01)	(.02)	(.01)	(.02)
Governance Quality	-.82	-1.72	.44***	-.38**
	(1.17)	(1.15)	(.14)	(.15)
Perceived Unfair X Governance		.27***		.27***
		(.02)		(.02)
Individual Level				
Economic Perception	.43***	.42***	.43***	.42***
	(.01)	(.01)	(.01)	(.01)
Education	-.01***	-.01***	-.01***	-.01***
	(.00)	(.00)	(.00)	(.00)
Rural	.04	.05*	.04	.05*
	(.03)	(.03)	(.03)	(.03)
Incumbent Approval	.82***	.81***	.82***	.81***
	(.02)	(.02)	(.02)	(.02)
Political Ideology 0-10=Right	-.01**	-.00	-.01**	-.00
	(.00)	(.00)	(.00)	(.00)
Subjective social class	.06***	.07***	.07***	.07***
	(.01)	(.01)	(.01)	(.01)
Wealth Quintile	.01	.01	.01	.01
	(.01)	(.01)	(.01)	(.01)
Female	-.03	-.03	-.03	-.03
	(.02)	(.02)	(.02)	(.02)
Country-Year Level				
Income Inequality	-.03	-.03	-.09***	-.10***
	(.10)	(.10)	(.02)	(.02)
Party Fragmentation	.01	.00	-.07*	-.07*
	(.07)	(.07)	(.03)	(.03)
Age of Democracy	-.03	-.03	.00	.00
	(.04)	(.04)	(.00)	(.00)
Government Economic Engagement	.18	.19	.01	.03
	(.30)	(.30)	(.09)	(.09)
Fixed Effects				
Bolivia	-1.19	-1.25		
	(.91)	(.89)		
Brazil	-1.14	-1.05		
	(.83)	(.82)		
Chile	.48	.49		
	(1.59)	(1.57)		
Colombia	-.39	-.29		
	(2.13)	(2.11)		
Costa Rica	3.26	3.66		
	(5.35)	(5.29)		
Dominican Rep.	-.64	-.65		
	(1.25)	(1.24)		
Ecuador	-1.73	-1.92		
	(1.21)	(1.19)		

El Salvador	-1.35**	-1.37**		
	(.66)	(.65)		
Guatemala	-2.05*	-2.13*		
	(1.12)	(1.11)		
Honduras	-1.88	-1.92		
	(1.48)	(1.46)		
Mexico	-1.93***	-1.96***		
	(.68)	(.67)		
Nicaragua	-1.56	-1.71		
	(1.13)	(1.12)		
Panama	-.83	-.78		
	(.82)	(.81)		
Paraguay	-1.62	-1.68		
	(1.08)	(1.07)		
Peru	-1.86**	-1.91**		
	(.90)	(.89)		
Uruguay	1.44	1.59		
	(1.28)	(1.27)		
Venezuela	-2.12	-2.39		
	(1.82)	(1.79)		
2011			.20	.21
			(.15)	(.15)
2013			.11	.11
			(.15)	(.15)
Number of Individuals	40620	40620	40620	40620
Number of Country Years	54	54	54	54
Wald Chi²	7589.75	7746.56	7475.43	7621.88

* p<.10, ** p<.05, *** p<.01 (standard errors). Multilevel ordered logit coefficients
Note: In the fixed effects models, Argentina and year=2015 are excluded as reference categories.

Note: The main results are robust to estimating models with country and survey-year fixed effects.

Although not shown here, the main results also hold when estimating each survey-year separately.

In other words, unobserved factors that may vary from year to year are not driving the main results.
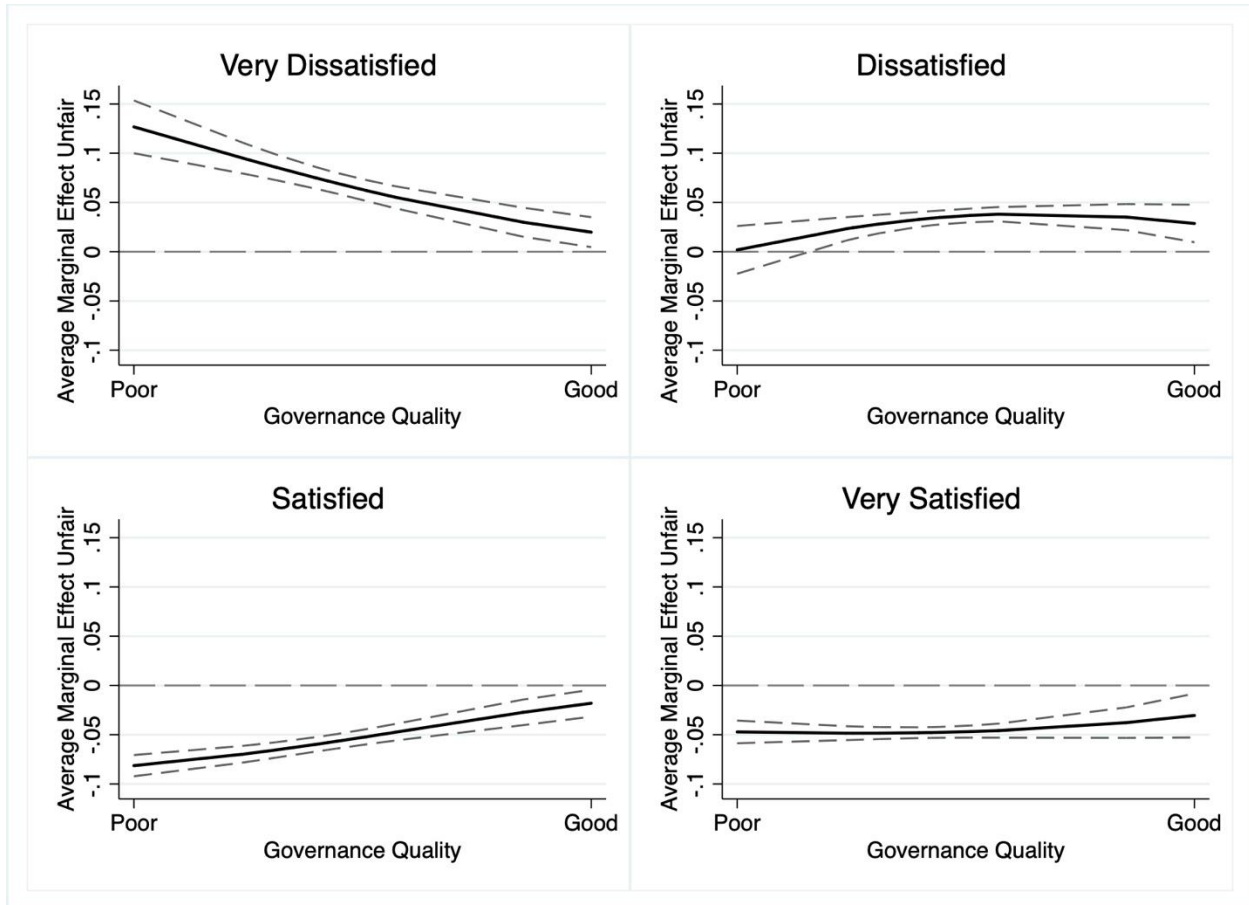
Table B6. Satisfaction with Democracy, Ideology Measure Including No Response

	(1)	(2)
Perceived Distributive Unfairness	-.57***	-.53***
	(.03)	(.03)
Governance Quality	.35***	.03
	(.13)	(.15)
Perceived Unfair X Governance		.19***
		(.05)
Individual Level		
Economic Perception	.42***	.42***
	(.01)	(.01)
Education	-.01***	-.01***
	(.00)	(.00)
Rural	.05**	.05**
	(.02)	(.02)
Incumbent Approval	.81***	.81***
	(.02)	(.02)
Ideology=Left	.21***	.21***
	(.03)	(.03)
Ideology=Center	.11***	.11***
	(.02)	(.02)
Ideology=Right	.22***	.22***
	(.03)	(.03)
Subjective social class	.07***	.07***
	(.01)	(.01)
Wealth Quintile	.01	.01
	(.01)	(.01)
Female	-.02	-.02
	(.02)	(.02)
Country-Year Level		
Income Inequality	-.10***	-.10***
	(.02)	(.02)
Party Fragmentation	-.10***	-.10***
	(.03)	(.03)
Age of Democracy	.00**	.00**
	(.00)	(.00)
Government Economic Engagement	-.15*	-.15*
	(.09)	(.09)
Variance (Unfair)	.06***	.04***
	(.01)	(.01)
Number of Individuals	49524	49524
Number of Country-Years	54	54
Wald Chi²	5239.49	5393.25

Note: * p<.10, ** p<.05, *** p<.01 (standard errors). Multilevel ordered logit coefficients.

Note: Ideology=none is excluded from the models as the reference category. Excluding individuals who did not answer the political ideology question does not alter the main findings in Table 2 of the main text.

Figure B3. Fairness Perceptions, Governance Quality, and Satisfaction with Democracy

Note: Figure B3 shows the predicted probability of observing each outcome of the dependent variable, satisfaction with democracy, across the range of *governance quality* values in the full sample. Dashed lines are 95% confidence intervals. Estimates were calculated using the results in the main text Table 2, Model 2.