

Supplement to

Education and propaganda: Tradeoffs to public education provision in nondemocracies

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Discussion: the basic model with two citizens

A natural reframing of the model that is closer in spirit to Edmond (2013) is to have it assume two citizens, $i = a, b$, each from an *ex ante* different social group. Citizens meet if they both enroll in a public school, and, after observing a public curriculum $\hat{\theta}$, form a political club when $c_a = c_b = 1$. In this formulation, propaganda prevents political mobilization by undermining coordination, i.e. preventing a political network from being formed between different social groups. For instance,

	$c_b = 1$	$c_b = 0$
$c_a = 1$	$\hat{\pi}(0 \hat{\theta})q\sigma(w + \alpha h - \alpha)$ $+ \hat{\pi}(1 \hat{\theta})(w + \alpha h - \alpha - \tau_1^{BE}),$ $\hat{\pi}(0 \hat{\theta})q\sigma(w + \alpha h - \alpha)$ $+ \hat{\pi}(1 \hat{\theta})(w + \alpha h - \alpha - \tau_1^{BE})$	$\hat{\pi}(1 \hat{\theta})(w + \alpha h - \alpha - \tau_1^{BE}),$ $\hat{\pi}(1 \hat{\theta})(w + \alpha h - \tau_1^{BE})$
$c_a = 0$	$\hat{\pi}(1 \hat{\theta})(w + \alpha h - \tau_1^{BE}),$ $\hat{\pi}(1 \hat{\theta})(w + \alpha h - \alpha - \tau_1^{BE})$	$\hat{\pi}(1 \hat{\theta})(w + \alpha h - \tau_1^{BE}),$ $\hat{\pi}(1 \hat{\theta})(w + \alpha h - \tau_1^{BE})$

gives the payoff matrix for each citizen's political club decision when there are two citizens. As in the basic set up, $Pr(\hat{\theta} = 0|\theta = 1) = 0$, since a benevolent ruler never uses propaganda. In turn, $\hat{\pi}(1|0) = 0$ and $\hat{\pi}(0|0) = 1$. Hence, when citizens observe $\hat{\theta} = 0$, the only Nash equilibrium at that stage is $c_a^* = c_b^* = 1$.

Thus a predatory ruler on one hand wants to use propaganda because it will lower the probability that citizens observe $\hat{\theta} = 0$ and raise the probability that they observe $\hat{\theta} = 1$, at which point there are potentially two equilibria: one with $c_a^* = c_b^* = 0$ and one with $c_a^* = c_b^* = 1$. However, propaganda (i.e. high γ) also increases $\hat{\pi}(0|1)$ and decreases $\hat{\pi}(1|1)$, to the extent that the $c_a^* = c_b^* = 0$ equilibrium may disappear from the $\hat{\theta} = 1$ case as well. Hence, the non-monotonic effect of propaganda.

Table A.1.1: summary statistics: model 1 (unbalanced)

Variable	Obs.	Mean	Std. Dev.	Min.	Max.
<i>PressConstraints</i>	2448	4.710	2.253	0.5	9.4
<i>Crisis</i>	2448	0.061	0.240	0	1
Education expenditures (% Gov)	1457	14.832	4.750	4.771	37.687
<i>lnEducation</i>	1457	2.646	0.324	1.562	3.629
GDP per capita (\$ 2010)	2442	11976.79	17214.42	186.919	91593.633
<i>lnGDPpc</i>	2442	8.301	1.589	5.231	11.425
Gov't expenditures (% GDP)	2315	15.839	5.819	2.804	69.543
<i>lnGovExpend</i>	2315	2.695	0.377	1.031	4.242
Military expenditures (% GDP)	2256	2.170	2.295	0	39.607
<i>lnMilitary</i>	2223	0.464	0.973	-6.908	3.679
<i>lnMilitary₂</i>	2256	1.021	0.473	0	3.704
<i>Polity</i>	2439	4.173	6.140	-10	10
Country	136	–	–	–	–
Year	18	–	–	1997	2014

Table A.1.2: summary statistics: model 1 (balanced)

Variable	Obs.	Mean	Std. Dev.	Min.	Max.
<i>PressConstraints</i>	1548	4.396	2.306	0.5	9.4
<i>Crisis</i>	1548	0.056	0.229	0	1
Education expenditures (% gov)	1157	14.837	4.388	4.771	37.687
<i>lnEducation</i>	1157	2.654	0.297	1.562	3.629
GDP per capita (\$ 2010)	1545	14114.48	18503.57	205.07	91593.633
<i>lnGDPpc</i>	1545	8.511	1.600	5.323	11.425
Gov't expenditures (% GDP)	1516	15.776	5.174	4.157	31.58
<i>lnGovExpend</i>	1516	2.699	0.358	1.425	3.453
Military expenditures (% GDP)	1464	2.045	1.881	0.001	16.157
<i>lnMilitary</i>	1464	0.376	1.072	-6.908	2.782
<i>lnMilitary₂</i>	1464	0.996	0.448	0.001	2.842
<i>Polity</i>	1540	5.022	6.021	-10	10
Country	86	–	–	–	–
Year	18	–	–	1997	2014

Table A.1.3: summary statistics: model 2

Variable	Obs.	Mean	Std. Dev.	Min.	Max.
Age_t	77056	26.345	5.995	18	43
$PressConstraints_{b=18}$	58758	4.291	1.957	0.5	9.9
$PressConstraints_{b=22}$	57985	4.235	1.972	0.5	9.9
$EducationAttainment$ (EA)	74000	4.157	2.044	0	7
Education completion age	65335	20.356	7.612	1	99
Employed	76384	0.524	0.499	0	1
Immigrant	36337	0.033	0.180	0	1
$IncomeLevel_t$	71618	3.784	2.257	0	9
International	27283	0.010	0.100	0	1
Noncitizen	28673	0.020	0.141	0	1
Number of children	76341	0.917	1.367	0	8
Participation (active)	69854	1.463	1.272	0	4
Participation (passive)	74846	2.578	1.673	0	6
Participation (demonstrate)	71748	0.675	0.712	0	2
Participation (petition)	71286	0.797	0.770	0	2
Participation (importance)	75743	1.301	0.978	0	3
Participation (interest)	75947	1.272	0.946	0	3
$Polity_t$	77056	6.735	3.862	-6	10
Relationship status	76837	1.272	1.387	0	3
Sex	77023	0.514	0.500	0	1
$Student_t$	76384	0.187	0.390	0	1
Country	70	—	—	—	—
Year	20	—	—	1994	2014

Table A.2: evaluating the FH score as a propaganda proxy

Dependent variable:	Academic constraints					
<i>PressConstraints</i>	0.086*** (0.012)	—	0.072*** (0.024)	0.077*** (0.024)	0.078*** (0.026)	0.073*** (0.026)
<i>Polity</i>	—	−0.028*** (0.006)	−0.006 (0.010)	−0.005 (0.011)	−0.021 (0.016)	−0.015 (0.011)
Observations	195	165	165	162	129	136
Exclude if missing <i>Polity</i> ?	No	No	No	Yes	No	No
Exclude autocracies > 4?	No	No	No	No	Yes	No
Exclude “crisis” countries?	No	No	No	No	Yes	No
Table 1 countries only?	No	No	No	No	No	Yes
R^2	0.20	0.13	0.17	0.18	0.23	0.26

Robust standard errors are reported in parentheses, with *** denoting significance at the 1% level. Independent variables are the FH press constraint score (0 to 10) and the Polity IV POLITY2 score (-10 to 10), both averaged over 2011 to 2016. Countries missing POLITY2 scores for any of those years are excluded in column 4. Dependent variable is an academic constraints indicator, which equals 1 if a country’s scholars have ever faced imprisonment, prosecution, or travel restrictions in the Scholars at Risk (SAR) Network’s Incident Index from 2011 to October 2017. A country is considered a “crisis” country if it received a -66, -77, or -88 POLITY score from 2011 to 2016. These are excluded from column 5, since countries in crisis may have weak states that are unable to enact or enforce education policy. Countries with Polity IV Autocracy scores over 5 are also omitted in column 5, since strong autocracies tend to be less transparent and therefore have fewer reported incidents.

Table A.2.1: proxy test summary statistics

Variable	Obs.	Mean	Std. Dev.	Min.	Max.
<i>AcademicConstraints</i>	195	0.287	0.454	0	1
<i>PressConstraints</i>	195	4.795	2.357	0.95	9.7
<i>Polity</i>	165	4.075	6.087	-10	10

Table A.3: model 1 with alternative military transformation

Dependent variable:	Degree of press constraints and media censorship			
	(1a)	(1b)	(1c)	(1d)
<i>lnEducation</i>	2.028*** (0.778)	1.881** (0.780)	2.542*** (0.929)	2.522*** (0.911)
<i>lnEdu</i> $\times$ <i>lnGDPpc</i>	-0.268*** (0.098)	-0.251** (0.098)	-0.312*** (0.117)	-0.309*** (0.115)
<i>lnGDPpc</i>	0.339 (0.332)	0.274 (0.335)	0.418 (0.409)	0.398 (0.394)
<i>Polity</i>	-0.111*** (0.022)	-0.104*** (0.023)	-0.104*** (0.025)	-0.098*** (0.026)
<i>Crisis</i>	—	0.198* (0.108)	—	0.167 (0.123)
<i>lnMilitary₂</i>	-0.047 (0.154)	-0.005 (0.175)	0.051 (0.178)	0.091 (0.202)
<i>lnGovExpend</i>	—	-0.043 (0.210)	—	-0.200 (0.236)
Country fixed effects	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes
Balanced panel?	No	No	Yes	Yes
Mean imputation?	No	No	No	No
Observations	1379	1356	1101	1092
Countries	133	132	85	85
Adj. R^2	0.23	0.22	0.22	0.21

Standard errors are clustered by country, with ***, **, and * denoting significance at the 1%, 5%, and 10% levels, respectively. The variable *lnMilitary₂* corrects for deletion or exacerbation of zero or near-zero military expenditure values post-logarithm by adding 1 to each value pre-logarithm.

Table A.4: model 1, correlates of missing education data

Dependent variable:	Correlates of missing education data						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
<i>lnGDPpc</i>	-0.032*** (0.006)	—	—	—	—	-0.001 (0.008)	-0.204 (0.146)
<i>Polity</i>	—	-0.011*** (0.002)	—	—	—	-0.009*** (0.002)	-0.004 (0.006)
<i>Crisis</i>	—	—	0.151*** (0.042)	—	—	-0.060 (0.051)	-0.024 (0.056)
<i>lnMilitary</i>	—	—	—	0.031*** (0.011)	—	0.022* (0.012)	-0.002 (0.059)
<i>lnGovExpend</i>	—	—	—	—	-0.045* (0.027)	-0.043 (0.034)	-0.063 (0.115)
Country fixed effects	No	No	No	No	No	No	Yes
Year fixed effects	No	No	No	No	No	No	Yes
Observations	2442	2439	2439	2223	2315	2134	2134
Adj. R^2	0.01	0.02	0.00	0.03	0.00	0.02	0.19

Robust standard errors reported in parentheses. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.

Table A.5: model 1 with categorical polity controls ($= \{-10, -9, \dots, 10\}$)

Dependent variable:	Degree of press constraints and media censorship						
	(1a)	(1b)	(1c)	(1d)	(1e)	(2)	(3)
<i>lnEducation</i>	1.784** (0.880)	1.723*** (0.576)	1.729*** (0.575)	1.699*** (0.593)	1.493** (0.589)	1.642** (0.636)	2.207*** (0.687)
<i>lnEdu</i> $\times$ <i>lnGDPpc</i>	-0.234** (0.111)	-0.219*** (0.074)	-0.220*** (0.074)	-0.219*** (0.076)	-0.193** (0.075)	-0.208*** (0.078)	-0.269*** (0.089)
<i>lnGDPpc</i>	0.198 (0.367)	0.312 (0.298)	0.310 (0.298)	0.342 (0.293)	0.310 (0.295)	0.336 (0.267)	0.518 (0.338)
<i>Crisis</i>	—	—	0.044 (0.104)	0.087 (0.109)	0.073 (0.109)	0.035 (0.146)	0.050 (0.124)
<i>lnMilitary</i>	—	—	—	-0.048 (0.094)	-0.049 (0.106)	-0.028 (0.083)	0.002 (0.116)
<i>lnGovExpend</i>	—	—	—	—	0.100 (0.199)	-0.076 (0.163)	-0.035 (0.229)
Polity controls?	No	Yes	Yes	Yes	Yes	Yes	Yes
Country fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Balanced panel?	No	No	No	No	No	No	Yes
Mean imputation?	No	No	No	No	No	Yes	No
Observations	1455	1452	1452	1366	1343	2134	1092
Countries	136	136	136	132	131	132	85
Adj. R^2	0.08	0.31	0.31	0.32	0.31	0.33	0.31

Standard errors are clustered by country, with ***, **, and * denoting significance at the 1%, 5%, and 10% levels, respectively. Column 2 applies a country mean imputation procedure to the education expenditure data and controls for a dummy, which takes a value of 1 when a value is missing.

Table A.6: model 1 with standardized explanatory variables

Dependent variable:	Proxy for propaganda: press constraints and media censorship			
	(1a)	(1b)	(1c)	(1d)
<i>lnEducation</i>	−0.050 (0.043)	−0.055 (0.044)	−0.061 (0.046)	−0.056 (0.047)
<i>lnEdu</i> × <i>lnGDPpc</i>	−0.124*** (0.047)	−0.125*** (0.047)	−0.133*** (0.050)	−0.124** (0.050)
<i>lnGDPpc</i>	−0.583 (0.450)	−0.621 (0.449)	−0.629 (0.455)	−0.625 (0.466)
<i>Polity</i>	−0.666*** (0.122)	−0.645*** (0.121)	−0.654*** (0.136)	−0.637*** (0.144)
<i>Crisis</i>	—	0.176* (0.100)	0.189* (0.106)	0.194* (0.108)
<i>lnMilitary</i>	—	—	−0.025 (0.099)	0.008 (0.115)
<i>lnGovExpend</i>	—	—	—	−0.017 (0.081)
<i>lnEdu</i> + <i>lnEdu</i> × <i>lnGDP_{min}</i>	0.190** (0.088)	0.187** (0.085)	0.196** (0.091)	0.183* (0.094)
<i>lnEdu</i> + <i>lnEdu</i> × <i>lnGDP_{10%}</i>	0.118* (0.065)	0.114* (0.063)	0.118* (0.067)	0.110 (0.070)
<i>lnEdu</i> + <i>lnEdu</i> × <i>lnGDP_{90%}</i>	−0.231** (0.092)	−0.238** (0.093)	−0.256** (0.098)	−0.237** (0.099)
Country fixed effects	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes
Balanced panel?	No	No	Yes	Yes
Mean imputation?	No	No	No	No
Observations	1452	1452	1366	1343
Countries	136	136	132	131
Adj. R^2	0.22	0.23	0.23	0.22

Standard errors are clustered by country, with ***, **, and * denoting significance at the 1%, 5%, and 10% levels, respectively. Coefficients and standard errors for all non-binary explanatory variables are standardized with mean zero. Rows labeled *lnEdu* + *lnEdu* × *lnGDP* report the combined effect (and standard errors) of *lnEducation* and *lnEdu* × *lnGDPpc* at different levels (sample minimum, 10% and 90%) within the sample distribution of *lnGDPpc*.

Table A.7: model 2 with separated variables

Dependent variable:	Press constraints and political participation							
	Interest		Importance		Demonstration		Petition	
	(1a)	(1b)	(2a)	(2b)	(3a)	(3b)	(4a)	(4b)
<i>EducationAttainment</i>	0.069*** (0.021)	0.116*** (0.023)	0.026 (0.027)	0.054** (0.021)	0.045** (0.022)	0.071*** (0.020)	0.071*** (0.018)	0.061*** (0.019)
<i>EA</i> $\times$ <i>Constraints_b</i>	-0.005* (0.003)	-0.035*** (0.007)	-0.002 (0.003)	-0.017** (0.007)	-0.001 (0.002)	-0.015*** (0.005)	-0.004* (0.002)	-0.006 (0.006)
<i>EA</i> $\times$ <i>Constraints_b</i> ²	—	0.003*** (0.001)	—	0.002** (0.001)	—	0.002*** (0.001)	—	0.0004 (0.001)
<i>EA</i> $\times$ <i>Polity_t</i>	0.001 (0.001)	0.002 (0.001)	0.003 (0.002)	0.003** (0.001)	0.002 (0.002)	0.001 (0.001)	0.001 (0.001)	0.002* (0.001)
<i>PressConstraints_b</i>	0.002 (0.014)	0.157*** (0.035)	0.003 (0.016)	0.088* (0.046)	0.009 (0.010)	0.076*** (0.026)	0.011 (0.011)	0.007 (0.032)
<i>PressConstraints_b</i> ²	—	-0.015*** (0.004)	—	-0.008 (0.005)	—	-0.007** (0.003)	—	0.0003 (0.003)
<i>Polity_t</i>	0.007 (0.015)	0.014 (0.012)	-0.009 (0.019)	0.003 (0.011)	0.022* (0.012)	0.025** (0.010)	0.006 (0.016)	0.016 (0.011)
<i>Age_t</i>	0.024** (0.011)	0.023** (0.010)	0.033*** (0.013)	0.027*** (0.010)	0.004 (0.011)	-0.001 (0.009)	0.006 (0.009)	0.007 (0.008)
<i>Age_t</i> ²	-0.0002 (0.0002)	-0.0002 (0.0002)	-0.0004** (0.0002)	-0.0003* (0.0002)	0.00005 (0.0002)	0.0001 (0.0002)	0.00003 (0.0002)	0.00001 (0.0001)
<i>IncomeLevel_t</i>	0.021*** (0.004)	0.018*** (0.003)	0.011*** (0.004)	0.008*** (0.003)	-0.002 (0.005)	-0.004 (0.004)	0.004 (0.003)	0.006*** (0.002)
<i>Student_t</i>	—	0.091*** (0.020)	—	0.063*** (0.014)	—	0.081*** (0.020)	—	0.103*** (0.019)
Country fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Non-students only?	Yes	No	Yes	No	Yes	No	Yes	No
Exclude immigrants?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Exclude non-citizens?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	32787	50123	32651	49952	31221	47637	30962	47229
Countries	65	70	65	70	65	70	65	70
Adj. <i>R</i> ²	0.11	0.10	0.10	0.09	0.13	0.13	0.26	0.26

Standard errors are clustered by country, with ***, **, and * denoting significance at the 1%, 5%, and 10% levels, respectively. Base year (*b*) is derived from the survey year (*t*), minus the respondent's age (*Age_t*), plus 18. All regressions control for sex, relationship status, number of children, and employment status.

Table A.8: model 2 with alternative base age ($b = 22$)

Dependent variable:	Press constraints and political participation					
	Passive participation			Active participation		
	(1a)	(1b)	(1c)	(2a)	(2b)	(2c)
<i>EducationAttainment</i>	0.066 (0.044)	0.151*** (0.045)	0.149*** (0.045)	0.123*** (0.035)	0.152*** (0.035)	0.148*** (0.032)
<i>EA</i> $\times$ <i>PressConstraints_b</i>	-0.003 (0.006)	-0.054*** (0.016)	-0.042** (0.017)	-0.004 (0.004)	-0.021** (0.010)	-0.021** (0.009)
<i>EA</i> $\times$ <i>PressConstraints_b</i> ²	—	0.006*** (0.002)	0.004** (0.002)	—	0.002* (0.001)	0.002* (0.001)
<i>EA</i> $\times$ <i>Polity_t</i>	0.005* (0.003)	0.006** (0.003)	0.004* (0.002)	0.001 (0.003)	0.002 (0.003)	0.001 (0.002)
<i>PressConstraints_b</i>	0.034 (0.023)	0.234*** (0.078)	0.208** (0.081)	0.016 (0.015)	0.087* (0.050)	0.080* (0.042)
<i>PressConstraints_b</i> ²	—	-0.023*** (0.008)	-0.018** (0.008)	—	-0.008 (0.005)	-0.008* (0.004)
<i>Polity_t</i>	-0.018 (0.024)	-0.019 (0.024)	0.012 (0.023)	0.026 (0.024)	0.025 (0.024)	0.041** (0.019)
<i>Age_t</i>	0.065*** (0.025)	0.062** (0.024)	0.052** (0.023)	0.031* (0.017)	0.031* (0.017)	0.021 (0.017)
<i>Age_t</i> ²	-0.001** (0.0004)	-0.001* (0.0004)	-0.001 (0.0004)	-0.0003 (0.0003)	-0.0003 (0.0003)	-0.0001 (0.0003)
<i>IncomeLevel_t</i>	0.034*** (0.007)	0.035*** (0.007)	0.029*** (0.006)	-0.001 (0.006)	-0.001 (0.006)	0.001 (0.005)
<i>Student_t</i>	—	—	0.138*** (0.051)	—	—	0.158*** (0.048)
Country fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Non-students only?	Yes	Yes	No	Yes	Yes	No
Exclude immigrants?	Yes	Yes	Yes	Yes	Yes	Yes
Exclude noncitizens?	Yes	Yes	Yes	Yes	Yes	Yes
Base age	22	22	22	22	22	22
Observations	38167	38167	49263	35951	35951	46336
Countries	65	65	70	65	65	70
Adj. R^2	0.13	0.13	0.12	0.23	0.23	0.23

Standard errors are clustered by country, with ***, **, and * denoting significance at the 1%, 5%, and 10% levels, respectively. Base year (b) is derived from the survey year (t), minus the respondent's age (Age_t), plus 22. All regressions control for sex, relationship status, number of children, and employment status.

Table A.9.1: model 2, evaluating immigrants and noncitizens, part 1

Is migration correlated with propaganda or educational attainment?								
Dependent variable:	Press constraints				Educational attainment			
	(1a)	(1b)	(1c)	(1d)	(2a)	(2b)	(2c)	(2d)
Immigrant	—	−0.036 (0.026)	—	—	—	−0.071 (0.108)	—	—
Non-citizen	—	—	−0.025 (0.035)	—	—	—	−0.358** (0.157)	—
International	—	—	—	−0.062 (0.042)	—	—	—	−0.448** (0.172)
$Polity_t$	−0.216*** (0.024)	−0.141*** (0.017)	−0.137*** (0.017)	−0.136*** (0.017)	−0.335*** (0.012)	−0.183*** (0.024)	−0.178*** (0.030)	−0.173*** (0.030)
Age_t	−0.047 (0.050)	−0.199** (0.085)	−0.222** (0.091)	−0.227** (0.095)	0.390*** (0.034)	0.411*** (0.035)	0.394*** (0.041)	0.387*** (0.043)
Age_t^2	0.001 (0.001)	0.004** (0.002)	0.004** (0.002)	0.004** (0.002)	−0.006*** (0.001)	−0.006*** (0.001)	−0.006*** (0.001)	−0.006*** (0.001)
$IncomeLevel_t$	0.003 (0.002)	0.003 (0.003)	0.002 (0.003)	0.003 (0.003)	0.190*** (0.010)	0.159*** (0.011)	0.164*** (0.012)	0.164*** (0.013)
Female	−0.0003 (0.011)	−0.019 (0.015)	−0.024 (0.018)	−0.024 (0.018)	0.146*** (0.052)	0.169*** (0.059)	0.164** (0.069)	0.154** (0.072)
Relationship Status	0.004 (0.006)	0.013 (0.009)	0.013 (0.009)	0.016* (0.009)	−0.106*** (0.025)	−0.045** (0.018)	−0.030 (0.019)	−0.032 (0.020)
Number of Children	−0.001 (0.012)	−0.007 (0.019)	−0.006 (0.020)	−0.008 (0.020)	−0.220*** (0.035)	−0.269*** (0.029)	−0.280*** (0.032)	−0.274*** (0.033)
Employed	0.014 (0.020)	0.019 (0.028)	0.018 (0.030)	0.017 (0.031)	0.468*** (0.066)	0.480*** (0.061)	0.507*** (0.070)	0.504*** (0.071)
Student	−0.020 (0.020)	−0.070* (0.036)	−0.112** (0.044)	−0.116** (0.046)	1.256*** (0.120)	1.339*** (0.115)	1.327*** (0.152)	1.290*** (0.153)
Country-year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Exclude immigrants?	Yes	No	No	No	Yes	No	No	No
Exclude non-citizens?	Yes	No	No	No	Yes	No	No	No
Base age (b)	18	18	18	18	N/A	N/A	N/A	N/A
Observations	52551	26565	23624	22674	66327	33026	26698	25543
Countries	70	53	39	37	70	53	39	37
Adj. R^2	0.87	0.87	0.87	0.85	0.31	0.28	0.29	0.28

Standard errors are clustered by country, with ***, **, and * denoting significance at the 1%, 5%, and 10% levels, respectively. International is a dummy that takes a value of 1 only if immigrant and non-citizen both take values of 1.

Table A.9.2: model 2, evaluating immigrants and noncitizens, part 2

Does migration affect the mapping from schooling to participation?						
Dependent variable:	Passive participation					
Immigrant	-0.102* (0.059)	-0.018 (0.145)	—	—	—	—
Noncitizen	—	—	-0.210*** (0.070)	-0.388*** (0.138)	—	—
International	—	—	—	—	-0.305** (0.114)	-0.496** (0.204)
<i>EducationAttainment</i>	0.074*** (0.014)	0.075*** (0.015)	0.074*** (0.017)	0.073*** (0.017)	0.067*** (0.016)	0.067*** (0.016)
<i>EA</i> ×Immigrant	—	-0.018 (0.024)	—	—	—	—
<i>EA</i> ×Noncitizen	—	—	—	0.043 (0.030)	—	—
<i>EA</i> ×International	—	—	—	—	—	0.045 (0.040)
<i>IncomeLevel_t</i>	0.026*** (0.007)	0.026*** (0.007)	0.034*** (0.009)	0.034*** (0.009)	0.034*** (0.009)	0.034*** (0.009)
<i>Polity_t</i>	-0.282*** (0.011)	-0.282*** (0.011)	-0.276*** (0.013)	-0.276*** (0.013)	-0.275*** (0.013)	-0.275*** (0.013)
<i>Age_t</i>	0.064*** (0.019)	0.064*** (0.019)	0.049** (0.023)	0.049** (0.023)	0.050** (0.024)	0.050** (0.024)
<i>Age_t²</i>	-0.001*** (0.0003)	-0.001*** (0.0003)	-0.001 (0.0004)	-0.001 (0.0004)	-0.001* (0.0004)	-0.001* (0.0004)
Sex	-0.289*** (0.036)	-0.289*** (0.036)	-0.303*** (0.042)	-0.303*** (0.042)	-0.300*** (0.044)	-0.300*** (0.044)
Relationship Status	0.013 (0.012)	0.013 (0.012)	0.020 (0.014)	0.020 (0.014)	0.021 (0.014)	0.020 (0.014)
Number of Children	0.0004 (0.012)	0.0004 (0.012)	0.001 (0.012)	0.002 (0.012)	0.001 (0.013)	0.001 (0.013)
Employed	0.006 (0.028)	0.006 (0.028)	-0.008 (0.035)	-0.008 (0.035)	-0.011 (0.035)	-0.011 (0.035)
Student	0.176*** (0.045)	0.176*** (0.045)	0.138** (0.054)	0.138** (0.054)	0.133** (0.057)	0.133** (0.057)
Country-year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Observations	32326	32326	26374	26374	25237	25237
Countries	53	53	39	39	37	37
Adj. <i>R</i> ²	0.10	0.10	0.10	0.10	0.10	0.10

Standard errors are clustered by country, with ***, **, and * denoting significance at the 1%, 5%, and 10% levels, respectively. International is a dummy with a value of 1 only if immigrant and noncitizen both take values of 1.

Table A.9.3: model 2, evaluating immigrants and noncitizens, part 3

Does migration affect the mapping from schooling to participation?						
Dependent variable:	Active participation					
Immigrant	−0.175** (0.068)	−0.108 (0.136)	—	—	—	—
Noncitizen	—	—	−0.268*** (0.086)	−0.370** (0.175)	—	—
International	—	—	—	—	−0.299** (0.125)	−0.387* (0.206)
<i>EducationAttainment</i>	0.108*** (0.010)	0.108*** (0.010)	0.110*** (0.011)	0.109*** (0.011)	0.108*** (0.011)	0.108*** (0.011)
<i>EA</i> ×Immigrant	—	−0.015 (0.022)	—	—	—	—
<i>EA</i> ×Noncitizen	—	—	—	0.025 (0.027)	—	—
<i>EA</i> ×International	—	—	—	—	—	0.021 (0.032)
<i>IncomeLevel_t</i>	0.005 (0.006)	0.005 (0.006)	0.001 (0.008)	0.001 (0.008)	0.002 (0.008)	0.002 (0.008)
<i>Polity_t</i>	−0.050*** (0.009)	−0.050*** (0.009)	−0.049*** (0.009)	−0.048*** (0.009)	−0.048*** (0.010)	−0.048*** (0.009)
<i>Age_t</i>	0.004 (0.012)	0.004 (0.012)	−0.007 (0.012)	−0.007 (0.012)	−0.008 (0.013)	−0.008 (0.013)
<i>Age_t²</i>	0.0001 (0.0002)	0.0001 (0.0002)	0.0002 (0.0002)	0.0002 (0.0002)	0.0003 (0.0002)	0.0003 (0.0002)
Sex	−0.094*** (0.025)	−0.094*** (0.025)	−0.067** (0.029)	−0.067** (0.029)	−0.076** (0.029)	−0.076** (0.029)
Relationship Status	−0.027*** (0.007)	−0.027*** (0.007)	−0.021*** (0.008)	−0.022*** (0.008)	−0.022** (0.008)	−0.022** (0.008)
Number of Children	0.008 (0.007)	0.008 (0.007)	0.004 (0.007)	0.004 (0.007)	0.004 (0.007)	0.004 (0.007)
Employed	0.102*** (0.024)	0.102*** (0.024)	0.123*** (0.028)	0.123*** (0.028)	0.121*** (0.029)	0.121*** (0.029)
Student	0.169*** (0.050)	0.169*** (0.050)	0.174*** (0.062)	0.174*** (0.062)	0.165** (0.062)	0.165** (0.062)
Country-year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Observations	30100	30100	25530	25530	24407	24407
Countries	52	52	39	39	37	37
Adj. <i>R</i> ²	0.22	0.22	0.23	0.23	0.20	0.20

Standard errors are clustered by country, with ***, **, and * denoting significance at the 1%, 5%, and 10% levels, respectively. International is a dummy with a value of 1 only if immigrant and noncitizen both take values of 1.

Table A.10: model 2 with standardized explanatory variables

Dependent variable:	Press constraints and political participation							
	Passive participation				Active participation			
	(1a)	(1b)	(2a)	(2b)	(3a)	(3b)	(4a)	(4b)
<i>EducationAttainment</i>	0.183*** (0.024)	0.180*** (0.024)	0.138*** (0.029)	0.134*** (0.024)	0.225*** (0.013)	0.223*** (0.013)	0.212*** (0.017)	0.198*** (0.017)
<i>EA</i> × <i>Constraints_b</i>	−0.048** (0.020)	−0.032 (0.022)	−0.040* (0.021)	−0.044** (0.020)	−0.034*** (0.013)	−0.023 (0.017)	−0.025 (0.017)	−0.018 (0.016)
<i>EA</i> × <i>Constraints_b</i> ²	—	—	0.043*** (0.015)	0.038*** (0.011)	—	—	0.012 (0.009)	0.014* (0.008)
<i>EA</i> × <i>Polity_t</i>	—	0.030 (0.024)	0.033 (0.023)	0.035** (0.017)	—	0.022 (0.026)	0.023 (0.026)	0.023 (0.019)
<i>PressConstraints_b</i>	−0.056 (0.035)	−0.052 (0.035)	−0.029 (0.037)	0.010 (0.038)	−0.003 (0.018)	−0.001 (0.017)	−0.008 (0.023)	0.019 (0.021)
<i>PressConstraints_b</i> ²	—	—	−0.015 (0.021)	−0.012 (0.016)	—	—	−0.007 (0.012)	0.009 (0.009)
<i>Polity_t</i>	0.043 (0.107)	0.047 (0.106)	0.055 (0.108)	0.167* (0.084)	0.138 (0.103)	0.141 (0.104)	0.145 (0.103)	0.202*** (0.072)
<i>Age_t</i>	0.133*** (0.025)	0.135*** (0.025)	0.133*** (0.025)	0.130*** (0.023)	0.078*** (0.013)	0.079*** (0.013)	0.079*** (0.013)	0.070*** (0.015)
<i>Age_t</i> ²	−0.023* (0.013)	−0.023* (0.013)	−0.022* (0.012)	−0.022* (0.011)	0.003 (0.011)	0.003 (0.011)	0.003 (0.011)	0.004 (0.010)
<i>IncomeLevel_t</i>	0.071*** (0.015)	0.070*** (0.015)	0.071*** (0.015)	0.056*** (0.012)	0.005 (0.015)	0.004 (0.015)	0.005 (0.015)	0.006 (0.011)
<i>Student_t</i>	—	—	—	0.158*** (0.030)	—	—	—	0.192*** (0.034)
Country fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Non-students only?	Yes	Yes	Yes	No	Yes	Yes	Yes	No
Exclude immigrants?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Exclude non-citizens?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	32432	32432	32432	49552	30546	30546	30546	46492
Countries	65	65	65	70	65	65	65	70
Adj. <i>R</i> ²	0.13	0.13	0.13	0.11	0.23	0.23	0.23	0.22

Standard errors are clustered by country, with ***, **, and * denoting significance at the 1%, 5%, and 10% levels, respectively. Base year (*b*) is derived from the survey year (*t*), minus the respondent's age (*Age_t*), plus 18. All regressions control for sex, relationship status, number of children, and employment status. Coefficients and standard errors for all non-binary explanatory variables are standardized with mean zero.

Variable descriptions

- **PressConstraints**: from Freedom House’s (FH) Freedom of the Press index (1997-2014), rescaled to be from 0 to 10.
- **PressConstraints_b**: same as above, with a countries’ value (1993-2014) assigned to a WVS respondent’s base age (i.e. 18 or 22). This was done by
 1. Determining the amount of years that have passed since a respondent was base age, given a respondent’s age at time of survey (or removing from sample if missing an age).
 2. Subtracting that amount of time from the survey year to derive the year in which that respondent was base age.
 3. Assigning the country-year Freedom Score measures to those years (or removing from sample if pre-1993).

Note: Since Macedonia is missing a score for 1993 but otherwise had quite stable scores, its 1994 value was used for 1993.

- **Crisis**: derived from Polity IV’s POLITY2 index; I give a value of 1 for any year it denoted a country as being engaged in “interregnum” or “transition”; a value of 1 for the respective years before and after any given “interregnum,” “transition,” or “foreign interruption” began; and a value of 1 for any year immediately preceding or following a change in its POLITY2 score of a magnitude larger than 5. Note that POLITY2 leaves years during a “foreign interruption” as missing values.
- **EducationAttainment (EA)**: from the World Values Survey’s (WVS) X025 (1994-2014), meaning highest education level, where 0 =incomplete primary, 1 =complete primary, 2 = incomplete vocational secondary, 3 =complete vocational secondary, 4 =incomplete preparatory secondary, 5 =complete preparatory secondary, 6 =some university, 7 =full university.
- **Education completion age**: from WVS’s X023 (1994-2014), meaning *expected* completion age, ranging from 1 to 99, with negative values treated as missing. See comment on “non-students only” below for relevance.
- **Education expenditures (% gov) and lnEducation**: from the World Bank’s (WB) World Development Indicators (WBI) database (1997-2014). Logged for normality.
- **Employment and student status**: derived from WVS’s X028 (1994-2014), meaning current employment status. Missing observations are treated as missing for all variables. Those who answered “full time,” “part time,” or “self-employed” given a value of 1 for the employed variable; those who answered “student” given a 1 for the student variable.
 - Some who identified as students marked a younger-than-current-age education completion age, while some who answered that they expect to complete their education at an older-than-current-age did not identify as students.
 - In pursuit of the most possible certainty, regressions marked yes to “non-students only” include only those who said they were not a student *and* that they were at the age of or older than their education completion age. Regressions marked no to “non-students only” are all-inclusive with respect to these variables.
- **GDP per capita (\$ 2010) and lnGDPpc**: from the WB WDI (1997-2014). Logged for normality.
- **Gov’t expenditures (% GDP) and lnGovExpend**: from the WB WDI database (1997-2014), measuring total government consumption expenditures. Logged for normality.

- **Immigrant, noncitizen, and international:** all derived from WVS (1994-2014).
 - *Immigrant*: derived from G017 (“born in this country”), G018 (“when came to country”), and G027A (“immigrant”). Anyone who answered yes on G017, anything on G018, and/or yes on G027A was given a value of 1 for the immigrant variable. Missing observations remained missing. A small number of observations marked that they were both an immigrant and born in their current country; I marked those as missing, given the indeterminacy.
 - *Noncitizen*: derived from G005 (“citizen of country”) and G027B (“citizen”). Anyone who answered yes to either was given a value of 1 for the noncitizen variable. Missing observations remained missing.
 - *International*: designed to denote individuals who likely were not educated in their current country. Anyone given a 1 for both the immigrant and noncitizen variables was given a 1. Missing observations for either variable are considered missing for the international variable. However, in pursuit of most possible certainty, main regressions exclude all immigrants *and* noncitizens.
- **IncomeLevel_t:** from WVS’s X047 (1994-2014), denoting income deciles from 0 to 9 (i.e. low to high), with negative values treated as missing.
- **Military expenditures (% GDP), lnMilitary, and lnMilitary₂:** from the WB WDI database (1997-2014). Logged for normality. *lnMilitary₂* corrects for exacerbation or deletion of zero or near-zero expenditure values post-logarithm by adding 1 prior.
- **Other individual-level data (Age_t, sex, number of children, and relationship status):** from WVS’s X003, X001, X011, and X007 (1994-2014), respectively.
 - All missing or negative *Age_t* observations removed from sample, as it is a key variable. Because of the necessary lower bounds on observing propaganda and data limitations going further back in time, ages range from 18 to 43.
 - Individuals are given a 1 if female and 0 if male, with negative values treated as missing.
 - Number of children ranges from 0 to 8 (i.e. 8 or more), with negative values treated as missing.
 - A relationship variable was derived from X007, wherein individuals were given a 0 if they answered “single/never married”; a 1 if they answered “divorced,” “separated,” or “widowed”; a 2 if they answered “living together as married”; and a 3 if they answered “married.” Negative values treated as missing.
- **Participation (active):** composite measure of WVS’s E025 and E027 (1994-2014), in which individuals are given a 0 if they answer that they “would never” sign a petition or attend a lawful demonstration, a 1 if they answer that they “might,” and a 2 if they answer that they “have,” for a total score ranging from 0 to 4. Negative or missing observations removed from sample.
- **Participation (passive):** composite measure of WVS’s A004 and E023 (1994-2014), in which individuals are given a 0 if they state that politics is “not at all” important or interesting, a 1 if they answer “not very” important or interesting, a 2 if they answer “somewhat” important or interesting, and 3 if they answer “very” important or interesting, for a total score ranging from 0 to 6. Negative or missing observations removed from sample.
- **Polity/Polity_t:** from Polity IV’s POLITY2 index measuring net democracy, ranging from −10 to 10, with 10 being the most democratic (on net).
- **AcademicConstraints:** equals 1 if a country’s scholars have ever faced imprisonment, prosecution, or travel restrictions in the Scholars at Risk (SAR) Network’s Incident Index from 2011 through October 2017.

Countries: model 1 (1997-2014)*

Albania; Angola; **Argentina**; **Armenia**; Australia; **Austria**; **Azerbaijan**; Bahrain; **Bangladesh**; **Belarus**; **Belgium**; **Benin**; **Bhutan**; **Bolivia**; Botswana; **Brazil**; **Bulgaria**; Burkina Faso; **Burundi**; Cambodia; **Cameroon**; **Canada**; **Cape Verde**; **Central African Republic**; **Chad**; **Chile**; China; **Colombia**; Comoros; Costa Rica; Croatia; **Cyprus**; **Czech Republic**; Democratic Republic of the Congo; **Denmark**; **Djibouti**; Dominican Republic; Ecuador; Egypt; **El Salvador**; Eritrea; **Estonia**; Ethiopia; **Fiji**; **Finland**; **France**; Gabon; **Gambia**; **Georgia**; Germany; **Ghana**; Greece; Guatemala; **Guinea**; Guinea-Bissau; **Guyana**; **Hungary**; **India**; **Indonesia**; **Iran**; **Ireland**; **Israel**; **Italy**; **Jamaica**; **Japan**; Jordan; Kazakhstan; Kenya; Kuwait; **Kyrgyzstan**; **Laos**; **Latvia**; **Lebanon**; Lesotho; Liberia; Lithuania; **Madagascar**; Malawi; **Malaysia**; **Mali**; Mauritania; **Mauritius**; **Mexico**; **Moldova**; **Mongolia**; Morocco; Mozambique; Namibia; **Nepal**; **Netherlands**; **New Zealand**; Nicaragua; **Niger**; **Norway**; **Oman**; **Pakistan**; Panama; **Paraguay**; **Peru**; **Philippines**; **Poland**; **Portugal**; **Qatar**; Republic of Congo; **Romania**; Russia; Rwanda; **Saudi Arabia**; **Senegal**; **Sierra Leone**; **Singapore**; **Slovakia**; **Slovenia**; Solomon Islands; **South Africa**; **Spain**; Sri Lanka; **Swaziland**; **Sweden**; Switzerland; **Tajikistan**; Tanzania; **Thailand**; **Togo**; Trinidad and Tobago; **Tunisia**; Turkey; Uganda; **Ukraine**; **United Kingdom**; **United States**; Uruguay; Venezuela; Vietnam; Yemen; Zambia

Countries: model 2 (1994-2014)**

Albania (1998, 2002); Algeria (2002, 2013); Argentina (1995, 1999); Australia (1995, 2005, 2012); Bangladesh (1996, 2002); Armenia (1997, 2011); Brazil (2006, 2014); Bulgaria (1997, 2005); Burkina Faso (2007); Canada (2000, 2006); Chile (1996, 2000, 2006, 2011); Colombia (1998, 2012); Cyprus (2006, 2011); Czech Republic (1998); Dominican Republic (1996); Ecuador (2013); El Salvador (1999); Ethiopia (2007); Estonia (1996, 2011); Finland (1996, 2005); France (2006); Georgia (2009, 2014); Germany (1997, 2006, 2013); Ghana (2007, 2012); Guatemala (2004); Hungary (2009); India (1995, 2001, 2006, 2014); Indonesia (2001, 2006); Italy (2005); Japan (2000, 2005, 2010); Lebanon (2013); Kyrgyzstan (2003, 2011); Latvia (1996); Lithuania (1997); Macedonia (1998); Malaysia (2006, 2012); Mali (2007); Mexico (1995, 1996, 2000, 2005, 2012); Moldova (1996, 2002, 2006); Netherlands (2006, 2012); New Zealand (1998, 2004, 2011); Nigeria (1995, 2000, 2011); Norway (1996, 2007); Pakistan (1997, 2001, 2012); Peru (1996, 2001, 2006, 2012); Philippines (2001, 2012); Poland (2005, 2012); Romania (1998, 2005, 2012); Russia (1995, 2006, 2011); Singapore (2002, 2012); Slovakia (1998); Slovenia (2005, 2011); South Africa (1996, 2001, 2006, 2013); South Korea (1996, 2001, 2005, 2010); Spain (1995, 2000, 2007, 2011); Sweden (1996, 2006, 2011); Switzerland (1996, 2007); Taiwan (1994, 1996, 2012); Tanzania (2001); Thailand (2007, 2013); Trinidad and Tobago (2006, 2011); Turkey (1996, 2001, 2007, 2011); Uganda (2001); Ukraine (1996, 2006, 2011); United Kingdom (1998, 2005); United States (1995, 1999, 2011); Uruguay (1996, 2006, 2011); Venezuela (1996, 2000); Yemen (2014); Zambia (2007)

*Countries in both unbalanced and balanced panel specifications appear in **bold**.

**There are no observations from 2008.