

Democratization and International Border Agreements

Online Appendix

The pages that follow contain more detailed information about the research design decisions I made and the results presented within the published manuscript.

1.0 Research design decisions

1.1 An explanation for the time period of the study

I select 1919 as the starting point because many economic data are not available (or less reliable) prior to this (Maddison 2003). Furthermore, it is challenging to calculate monadic measures of settled borders earlier than 1919 – as German and Italian states unify and the Austro-Hungarian empire collapses (see Owsiak 2012). The study ends in 2006 due to the trade data employed (Barbieri et al. 2009).

1.2 An explanation for stressing the Polity democracy measure.

I stress the Polity measure of democracy both because it covers more years than Vanhanen (2000) and because Elkins (2000) finds gradual measures are more reliable and valid than dichotomous ones (i.e., Przeworski et al. 2000). Nonetheless, I use alternative measures of democracy to ensure the robustness of results (see below).

1.3 An explanation for using border settlement treaties to identify “settled borders.”

The concept of “settled borders” purports to capture a psychological sense of finality with respect to the placement of international borders. This concept, however, remains somewhat difficult to capture empirically.

Gibler (2012) employs three proxies for external threat: colonial heritage, territorial transfers, and territorial disputes. Yet these are imperfect measures of “settlement.” The first does not capture unsettled borders, since colonial powers sometimes exercised great care in delimiting, and therefore “settling,” internal borders (e.g., Britain in Bhutan and Myanmar). The second is very conservative (since not all “settled borders” involve territorial transfers) and prevents us from identifying salient threats *ex ante* (i.e., we need the transfer to infer that a threat existed). The third is imperfect, as disputes can (and do) occur after border settlement as well (see Kocs 1995 on “manufactured disputes”).

One alternative is to try measuring borders as “the absence of conflict.” One

might infer from the absence of conflict that borders remain “settled” among the populations of the involved states. Unfortunately, such an operationalization presents two problems. First, it prevents one from identifying “unsettled” borders *ex ante* (i.e., we need to observe *conflict* to ascertain whether a border is “unsettled,” but a state may not accept a border and still not engage in overt, military conflict with a neighboring state). Second, it precludes the possibility of using that measure to study conflict behavior, which is one of the goals of the territorial peace research agenda.

The second alternative derives from Owsiak (2012), which follows Kocs (1995). Owsiak argues in favor of a more direct, behavioral measure of settled borders – the signing of international border treaties that delimit the entirety of neighboring states’ mutual border(s) (see also Rasler and Thompson 2011, which follow a similar decision). I use this measure to address the deficiencies associated with indirect measures and so that I know precisely when to expect democratization to occur (i.e., *after* agreement to delimit all borders are signed).

2.0 Augmentation of presented results

2.1 Tables 1-2: One might ask how settled borders affect the components of the Polity democracy measure. That is, what is the precise effect of border settlement on democratic institutions? To address this question, I re-run Model 2 (Table 2) using the various political institution variables presented in Table 1 (from Polity) as dependent variables. Because of the coding of these political institutional variables (Marshall and Jaggers 2009), I employ ordered probit regressions in the table below.

The results below (and additional analyses) reveal that border settlement exerts a positive, statistically significant effect on all components of the Polity index, as well as the more aggregated concept variables. The only exception occurred within the model examining the openness of the executive recruitment process, in which border settlement exerted no statistically significant effect. Yet two points are worth noting about this latter finding. First, this is one of three variables designed to capture the executive recruitment process. Border settlement exerts a positive and significantly significant effect on the other two (regulation and competitiveness). Second, when I run a model using Polity’s executive recruitment concept variable (which combines the variables on the regulation, competitiveness, and openness of the executive recruitment process), border settlement again exerts a positive and statistically significant effect on executive recruitment (broadly defined).

Based on this analysis, I conclude that border settlement exerts a statistically significant effect on *nearly all* components of the Polity variable. States that

settle all of their borders (by signing international border agreements); experience more regulated elections through which executives are chosen; are more likely to have relatively more stable and enduring political groups that compete for positions; are more likely to have voluntary transfers of power to competing groups; are less likely to experience coercion or disruption during political processes, and are more likely to have an executive whose behavior can be checked. (All of these statements are based on how Polity codes its component variables; see Marshall and Jaggers 2009).

Table 2.1.1: Ordered Probit Regression of Components of the Polity Index

	Model 1	Model 2	Model 3
Dependent Variable	<i>Constraints on Executive</i>	<i>Regulation of Pol. Participation</i>	<i>Competitiveness of Pol. Participation</i>
All settled borders	0.160*** (0.054)	0.109** (0.048)	0.150*** (0.041)
Lagged GDP	0.000*** (0.000)	0.000*** (0.000)	0.000*** (0.000)
Lagged GDP change	0.098 (0.275)	0.304 (0.290)	-0.770* (0.396)
Lagged trade openness	0.025* (0.015)	-0.024 (0.016)	0.019 (0.013)
Lagged military personnel	0.000 (0.000)	0.000 (0.000)	-0.000 (0.000)
Lagged military expenditures	-0.000 (0.000)	0.000 (0.000)	0.000 (0.000)
Lagged urban population	-0.075 (0.069)	-0.099 (0.070)	-0.055 (0.056)
Lagged previous non-democratic movement	-0.003 (0.003)	-0.009*** (0.003)	0.002 (0.002)
Lagged dependent variable	1.402*** (0.075)	2.708*** (0.103)	2.441*** (0.140)
Obs.	6,881	6,881	6,881
Chi2	472.87***	940.88***	620.69***
Pseudo R2	0.629	0.740	0.756

Notes: * p -value < 0.10, ** p -value < 0.05, *** p -value < 0.01.

2.2 Table 3: Table 2.2.1 below contains the full results for the ordered probit model underlying Table 3 in the published manuscript. Table 2.2.2 below presents the probability of observing each type of regime in year t (either autocracy, anocracy, or democracy), given the settled status of the borders and the regime type during year $t-1$.

Table 2.2.1: Full Ordered Probit Results

Variable	Coefficient	Robust Standard Error
Y*0	-3.856***	0.245
Y*1	-1.752***	0.592
All settled borders	0.464**	0.213
All settled borders*(Y*0)	0.258**	0.117
All settled borders*(Y*1)	-0.451**	0.223
Lagged GDP	0.000***	0.000
Lagged GDP*(Y*0)	-0.000	0.000
Lagged GDP*(Y*1)	-0.000***	0.000
Lagged GDP change	2.804**	1.126
Lagged GDP change*(Y*0)	-3.051***	0.948
Lagged GDP change*(Y*1)	-2.798**	1.205
Lagged urban pop.	0.466	0.733
Lagged urban pop.*(Y*0)	-0.142	0.406
Lagged urban pop.*(Y*1)	-0.501	0.745
Lagged trade openness	0.084	0.076
Lagged trade openness*(Y*0)	0.099***	0.035
Lagged trade openness*(Y*1)	-0.040	0.076
Lagged military personnel	0.000	0.001
Lagged military personnel*(Y*0)	-0.000	0.000
Lagged military personnel*(Y*1)	-0.000	0.000
Lagged military expend.	-0.000	0.000
Lagged military expend.*(Y*0)	-0.000***	0.000
Lagged military expend.*(Y*1)	0.000	0.000
Lagged prev. non-dem. mvmt.	-0.013*	0.008
Lagged prev. non-dem. mvmt.*(Y*0)	0.020***	0.006
Lagged prev. non-dem. mvmt.*(Y*1)	0.017**	0.008
N	7,238	
Chi-squared	1677.82***	
Pseudo R2	0.777	

Notes: * p -value < 0.10, ** p -value < 0.05, *** p -value < 0.01.

Table 2.2.2 The Probability of Observing Each Regime Type, Conditional on Border Status and Regime Type in Previous Period

Probability of Observing a(n):	Autocracy	Anocracy	Democracy
Given the following conditions:			
<i>Previous Regime, Autocracy</i>			
Not all settled borders	0.867	0.132	0.000
All settled borders	0.810	0.189	0.000
<i>Previous Regime, Anocracy</i>			
Not all settled borders	0.012	0.535	0.455
All settled borders	0.010	0.530	0.460
<i>Previous Regime, Democracy</i>			
Not all settled borders	0.000	0.058	0.942
All settled borders	0.000	0.019	0.981

3.0 Robustness of presented results

3.1 Table 1: Settled Borders and Democratization Characteristics, 1919-2006

- 3.1.1 Results are robust to the use of State Department indicators, instead of Amnesty International data (see Wood and Gibney 2010).
- 3.1.2 Findings hold for each component of both the physical integrity and empowerment rights indices, as well as indicators of women's rights (Cingranelli and Richards 2010).

3.2 Table 2: Regression of Democratization, 1919-2006

- 3.2.1 Results are robust to using imputed data.
- 3.2.2 Results are robust to models controlling for: different methods of addressing temporal interdependence (e.g., fixed effects, time counters, etc.), island states (coded as having settled borders in the model), regions, and states receiving a score of +10 on the Polity scale (i.e., right censored observations).

3.3 Table 3: Interaction Effects (Coefficients) from Ordered Probit Regression

- 3.3.1 Results are robust to alternative regime thresholds (moving from +/- 6 as a cut off to either +/- 7 or +/- 5).
- 3.3.2 Results are robust to alternative measures of democratic regimes, including both Vanhanen (2000) and Przeworski et al. (2000).

References

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