

The Impact of Electoral Rules and Electoral Prospects on the Ratification of Preferential Trade Agreements

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Abstract

This paper proposes a novel explanation for why states ratify preferential trade agreements (PTAs). I argue that current governments, anticipating them losing power in the future, use PTAs to constrain future governments. This mechanism can generate two unique observable implications that are not compatible with other theories. Because the demand for constraining opponents varies with electoral institutions and electoral prospects, I expect governments are more likely to ratify PTAs under the under majoritarian electoral rules and before losing elections. Empirical results from a dataset of all PTAs from 1945 to 2006 strongly support these hypotheses.

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1 Introduction

International treaties play an important role in shaping international trade and the world economy. One important type is the preferential trade agreement (PTA). A PTA is a set of agreements that regulate tariffs and other trade-related policies between member states. It removes trade barriers and gives preferential access to certain products and markets from member states. Scholars have some knowledge of why and when states join PTAs (e.g., [Mansfield and Milner, 2012](#)), but we are far from fully understand this issue.

In this paper, I provide a new explanation for why governments ratify PTAs. In particular, I argue governments use PTAs to constrain their domestic opponents. Governments, confronting the possibility of losing power in the future, are eager to secure their policies against their political adversaries. However, defending their policies can be a difficult job in the event of government rotation. Like many other international treaties, PTAs include legally binding provisions, which are enforced by international actors. This fact implies PTAs have larger binding power than many domestic hurdles. For example, if a country ratifies a PTA with the US, then any future government in this country that violates the PTA will face the possibility of sanction from the US. Given PTAs' substantial binding power, I expect governments use PTAs to constrain their opponents.

This binding-opponent mechanism can be differentiated from other explanations since the demand for constraining opponents varies with electoral institutions and electoral prospects. A governments has a greater demand for binding its opponents when it confronts a higher risk of losing power. Therefore, it is more likely to ratify a PTA when it anticipates it will lose an upcoming election. Moreover, electoral rules matter. The majoritarian/plurality (majoritarian henceforth) voting rule magnifies the volatility in the electorate because of its winner-take-all feature ([Rae, 1967](#)). Holding electoral uncertainty fixed, governments under the majoritarian rule face a higher risk of losing. The proportional representation (PR) rule, because of its high inclusiveness and power-sharing feature, usually has governing parties with less dominant power. Thus, even if the current government loses power in a PR election, its loss will be relatively minor.

These two effects work in the same direction: under the majoritarian rule, governments face a higher risk of losing and they lose more. Consequently, governments under the majoritarian rule, compared to their PR counterparts, have a greater demand for constraining future governments.

I test these two implications using a dataset that contains all PTAs from 1945 to 2006. The empirical results show that the impacts of electoral rules and electoral prospects on PTA ratification are consistent with the binding-opponent mechanism.

2 Related literature

Existing literature that explains why states join PTAs mostly follows the tradition of treating states as coherent and consistent actors. For example, one major explanation along this tradition argues interest groups are behind PTAs (Grossman and Helpman, 1995; Moravcsik, 1998; Manger, 2005). Another strand of literature (e.g., Maggi and Rodríguez-Clare, 1998; Staiger and Tabellini, 1999; Maggi and Rodríguez-Clare, 2007) focuses on the time-inconsistency problem and emphasizes that states cannot credibly restrain themselves from protective policies. In this literature, PTAs are used to make credible commitments. Mansfield and Milner (2012) is one of the few works that connect PTAs to domestic politics. In their influential book, Mansfield and Milner (2012) find democracies are more likely to join PTAs to signal commitment while more veto players hinder PTAs' ratification because satisfying veto players is costly.

My argument differs with the existing literature in several significant aspects. First of all, states, especially democracies, are neither coherent nor consistent. Governments in democracies change hands every (few) electoral cycle, which makes their preferences incompatible over time. For example, the US government controlled by the Democratic party has very different preferences than that under Republican control.

Second, while I also emphasize PTAs' binding power, in my theory, governments use PTAs to constrain their adversaries for domestic striving for power. Parties in government well anticipate they will lose power sooner or later. Hence, they face another "time-inconsistency problem:"

their policy may be nullified by their rivalries in the future. Thus, my theory can generate a new prediction: the ratification of PTAs is correlated with electoral rules and electoral prospects. If, on the other hand, PTAs are used to signal commitment, then we should not expect their ratification correlated with electoral rules or electoral prospects.

This paper's mechanism is also related to the broad idea that international organizations impose costs on their member states. For example, in an unconsolidated democracy, leaders that sincerely support democratic norms can utilize international organizations to prevent democratic backsliding by inflicting high costs on groups that have no interest in democratization (Mansfield and Pevehouse, 2006). My theory generalizes this thought to governments in consolidated democracies: they can use PTAs to avoid policy shift.

Moreover, this paper is in the same vein as the strategic deficit theory (Persson and Svensson, 1989; Tabellini and Alesina, 1990). The strategic deficit theory states that governments may run fiscal deficits to constrain their successors while I find governments enter PTAs to achieve the same goal.¹

Finally and perhaps more importantly, my paper connects the comparative politics literature on electoral rules with the international relations literature on PTAs. In the comparative politics literature, scholars find electoral rules shape party systems and voting behavior. For example, Duverger's law, single-member districts and simple plurality rule favor a two-party system, is well accepted (Duverger, 1963). In his seminal book, Rae (1967) finds that PR systems allocate seats more proportionally and do not magnify volatility in the electorate compared to the majoritarian rule. Most scholars follow Duverger's (1963) and Rae's (1967) thoughts and present various connections between electoral laws and party systems (e.g., Riker, 1982; Lijphart, 1990; Neto and Cox, 1997; Grofman, 2006). On the voter side, researchers also find electoral rules impact strategic voting (Cox, 1997), pork barrel politics (Lancaster, 1986; Stratmann and Baur, 2002), turnout (Norris, 2003), and redistribution (Persson and Tabellini, 2000), but few of them connect electoral

¹Nevertheless, running fiscal deficits is not efficient while there is no reason to speculate that joining PTAs is inefficient.

systems to party decisions in the international arena.

3 Theory and hypotheses

In democracies, government composition shifts with electoral cycles. Current governments may lose power in the future. Therefore, they have incentives to constrain their successors. However, it is difficult to set up binding domestic hurdles. Laws be changed or nullified. Constitution amendments are harder to challenge, but they are also costly. Entering a PTA is an effective and cheap way to limit the choice of future governments. PTAs can provide selective markets to selective electorates or interest groups, and any unilateral violation will have international consequences.² Even if the successive government manages to re-negotiate a better deal, such re-negotiations can be very costly.³ Therefore, current governments can opt for PTAs to constrain their successors.

Unlike multilateral international organizations, PTAs are more flexible regarding their coverage. PTAs only involve a relatively small number of states. Governments can use exclusion clauses to channel benefits to their own electorates and to secure their policy goals without benefiting their opponents. Ideally, governing parties set the terms of their PTAs close to their ideal policies. Hence, in principle, PTAs can constrain opponents without sacrificing the interest of the current governing parties. From this perspective, PTAs' flexibility is valuable for governments

²For example, Chapter 11 of the NAFTA allows investors to directly sue the state of another NAFTA party in an international tribunal. In the event of a substantial breach, the government is likely to encounter capital flight or even a trade war. This is true even for the US: many economists worry a trade war after Trump threatening to leave the NAFTA (<http://money.cnn.com/2016/07/06/news/economy/trump-nafta/>).

³The most extreme case perhaps is Brexit, which is estimated to cost £50 billion according to the EU Commission President Jean-Claude Juncker (<http://money.cnn.com/2017/03/29/news/economy/brexit-article-50-cost-economy-debt/>).

when they are trying to limit their successors. This is also why I focus on PTAs in this study.

The incentive for binding successors varies with electoral rules. Electoral rules determine how parties compete against each other and in what ways they share or divide power. Although mixed systems exist in some countries, most electoral rules belong to one of the two large categories: the majoritarian rule or the PR. Parties in government face different incentives to constrain their successors under these two classes of electoral systems. On average, governing parties under the majoritarian rule have greater incentives to limit the choice of their successors than their PR counterparts.

The reason for this argument is twofold. First, an established wisdom from the comparative politics literature on electoral rules points out the majoritarian rule's winner-take-all feature magnifies volatility in the electorate (Rae, 1967). In other words, small changes in vote shares can alter the distribution of power in a significant way under the majoritarian rule while such changes can only marginally re-allocate power distribution under PR. Thus, holding the uncertainty in the electorate fixed, governments under the majoritarian rule are exposed to a larger magnitude of uncertainty and a greater risk of losing power compared to their PR counterparts.

Second, because the majoritarian rule usually leads to fewer parties (Duverger, 1963) and is less inclusive in general, future governments have more power and larger freedom to set their preferred policies once they become in power. In PR systems, however, future governments are more restricted due to PR's power-sharing nature. Therefore, policies implemented by the other side are usually less desirable to the current governing parties in majoritarian systems.

When combining these two thoughts, I conclude that governments have greater incentives to limit the choice of their successors under the majoritarian rule because of a greater risk and a worse consequence of losing power. Therefore, holding other factors fixed, I expect that governing parties are more likely to ratify PTAs under the majoritarian rule than PR on average:

Hypothesis 1. *The probability of PTA ratification is positively associated with the majoritarian rule.*

For the binding-opponent mechanism to work, one necessary condition is that PTAs do have

binding power. PTAs without dispute settlement mechanisms (DSMs) lack binding power. DSMs are included in most PTAs to enforce the agreement. However, some PTAs lack DSMs.⁴ The lack of DSMs implies that disputes must be resolved by informal negotiations, which gives more leeway to successive governments (Jo and Namgung, 2012). Hence, given PTAs are used to bind domestic opponents, I expect to see that governments are no more likely to ratify a PTA without DSMs under the majoritarian rule:

Hypothesis 2. *The positive association between PTA ratification and the majoritarian rule only exists for PTAs with DSMs.*

In addition, governments may strategically choose when to ratify a PTA. They may deliberately delay the ratification to get more leverage both internationally and domestically. However, when governing parties expect to lose the next election, they have to ratify their PTA immediately. Otherwise, their PTA might never be ratified after them losing power. Because the likelihood of losing is greater under the majoritarian rule, I expect to find an interactive effect between electoral prospects and electoral rules. In particular, governing parties in majoritarian systems should be more responsive to vote share change. Also, they should be more likely to ratify a PTA if they anticipate a higher chance of losing in an upcoming election. However, they should be no more likely to ratify when they are likely to win the election. These claims are summarized in the following hypothesis:

Hypothesis 3. *The probability of PTA ratification under the majoritarian rule, compared to that under PR, is*

1. *more responsive to vote share change,*
2. *higher before a losing election, and*
3. *weakly lower before a winning election.*

⁴For example, the India–Nepal Free Trade Agreement does not have a formal DSM.

The rest of this paper tests these three hypotheses using a dataset of all PTAs from 1945 to 2006. The next section starts with the description of the data.

4 Data

My dataset is compiled from the dataset collected by [Mansfield and Milner \(2012\)](#), the Database of Political Institutions ([Beck et al., 2001](#)), and the Issue Correlates of War (ICOW) Colonial History Dataset ([Hensel, 2014](#)). The unit of analysis is dyad-year. In each dyad i - j , the ratifying country is i . Since my mechanism does not apply to nondemocratic countries, only democratic countries with *Polity2* measure greater or equal to six are in my sample.

My dependent variable, *PTA ratification*, is a binary variable that indicates whether country i ratifies a PTA involving country j in a given year. The reason I focus on ratification is that a PTA must be ratified by the legislative branch before becoming effective. My independent variable is whether the plurality rule dominates the lower house election in country i , which is also binary. This variable is directly taken from the Database of Political Institutions ([Beck et al., 2001](#)).

Other important covariates, *Losing election* and *Winning election*, are defined as follows. *Losing election*= 1 if there is a legislative election in the upcoming year and the incumbent party is removed in that election. *Losing election*= 0 otherwise. Symmetrically, *Winning election*= 1 if there is a legislative election in the upcoming year and the incumbent party keeps in power after that election. Likewise, *Winning election*= 0 if those conditions are not met.

In addition to the electoral system, I also include the following variables to control other features in country i 's electoral and party system. *House fragmentation* is the probability of two randomly selected legislators belonging to different parties. This variable controls for the fact that PR systems are usually associated with more parties. *Veto* measures the effective political constraints in country i at year t .⁵ *Parliamentary* records whether country i has a parliamentary

⁵*House fragmentation* and *veto* capture different concepts. *House fragmentation* only contains the information of the legislative parties while *veto* “identifies the number of independent

Table 1: Summary Statistics on Selected Variables

VARIABLES	N	mean	sd	min	max
PTA ratification	683,627	0.00712	0.0841	0	1
DSM	68,181	0.897	0.304	0	1
Polity2	406,555	8.78	1.41 5	6	10
Veto	536,532	0.362	0.177	0	0.710
House fragmentation	427,246	0.610	0.204	0	1
Majoritarian	431,114	0.466	0.499	0	1
British Colony	501,797	0.446	0.497	0	1
# of past PTAs	660,797	0.667	2.865	0	50
Losing election	403,234	0.015	0.123	0	1
Winning election	403,234	0.236	0.425	0	1
ENP	433,307	2.197	5.486	1	50
Vote margin	325,380	0.0246	0.152	-0.621	1

system. Although I only work with democratic countries, I also include the *Polity2* measure to control for how democratic country i is.

In some specifications, I include the effective number of parties (*ENP*) in government and the total number of past PTAs country i has ratified. *ENP* is defined using seat shares:

$$ENP = \frac{1}{\sum_{k=1}^n s_k^2}$$

where n is the total number of parties in government and s_k is party k 's seat share.

Mansfield and Milner (2012) recommend a list of other economic and political control variables. To be conservative, I include all of them. Please consult the online appendix for their definitions. Table 1 presents summary statistics on selected variables. Summary statistics for all variables are reported in the online appendix.

branches of government (executive, lower and upper legislative chambers) with veto power over policy change” (Henisz, 2002).

5 Empirical analysis

Baseline model

Since my dependent variable is binary, the baseline model is a standard logistic regression:

$$\text{logit}(PTA\ ratification_{ijt}) = \alpha + \beta Plurality_{it} + X\Gamma + \varepsilon_{ijt}$$

where X is a vector of control variables and ε_{ijt} is the error term. Following the practice of [Mansfield and Milner \(2012\)](#), I report the robust standard errors clustered by dyads. I also include dyadic fixed effects and year fixed effects to further control for dyadic idiosyncratic effects, time trend, or year specific shocks. Note that since the number of observations is large, adding a dummy variable for each dyad fails to implement in common statistical software. I use conditional logit for dyadic fixed effects. This practice is superior in terms of consistency than adding a dummy variable for each dyad ([Katz, 2001](#)). The only drawback is that the coefficients of dyadic fixed effects are not identified. To save space, I only report the coefficients that are directly related to country i 's electoral and party system, see [Table 2](#). Regression tables that contain all variables are relegated to the online appendix.

As expected, the coefficient of the majoritarian rule is positive and statistically significant in all specifications. The coefficient of *house fragmentation* is negative and significant in almost all models, suggesting a more fragmented legislature is associated with a lower probability of PTA ratification.⁶ The impact of the *Polity2* measure is mixed, depending on whether we control for the dyadic fixed effects or not. The coefficient of veto players is not significant in most settings

⁶This finding is conceptually different from [Mansfield and Milner's \(2012\)](#) argument on veto players in democracies. As stated in [footnote 5](#), *house fragmentation* captures the transaction cost in the legislature. Since the ratification of PTA is the legislature's responsibility, *house fragmentation* is a better proxy for the transaction cost in the ratification process.

Table 2: Baseline results

DV:	PTA ratification			
	(1)	(2)	(3)	(4)
Majoritarian	0.150*** (0.052)	0.145*** (0.053)	0.487*** (0.172)	0.670*** (0.211)
House fragmentation	-0.560*** (0.176)	-0.857*** (0.181)	-0.063 (0.263)	-0.784*** (0.271)
Polity2	-0.047*** (0.017)	-0.039** (0.017)	0.257*** (0.043)	0.281*** (0.046)
Veto	-0.266 (0.192)	-0.044 (0.196)	0.057 (0.261)	0.468* (0.277)
Year FE		Yes		Yes
Daydic FE			Yes	Yes
Clusters	17,981	17,969	2,126	2,126
Observations	277,023	256,104	35,976	35,976

Note: Logit regressions with dependent variable *PTA ratification*. Only democracies ($Polity2 \geq 6$) are in the sample. All models include a list of control variables (not shown, see Appendix A for their definitions). Standard errors are clustered at day level. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

and has a “wrong” sign when both dyadic and year fixed effects are controlled for.⁷ This result suggests that, conditional on the party fragmentation in the legislature, veto players in other government branches only play a secondary role in democracies.

Because the coefficients of dyadic fixed effects are not identified in conditional logit regressions, the marginal effect of the majoritarian rule is calculated from model (1) in Table 2. If we hold all other variables at their means, the marginal effect of the majoritarian rule is 0.0005 (s.e. = 0.0002). The average in-sample marginal effect is .0014 (s.e. = 0.0005). These numbers appear negligible at first sight. If the infrequency of ratifying a PTA is taken into account, however, an “average” country (holding all other variables at their means) with a majoritarian system is 15.0% more likely to ratify a PTA than a similar country without a majoritarian system. In addition, in this sample, countries with majoritarian systems are on average 20.4% more likely to ratify PTAs than countries without.⁸ Hence, the electoral rule has a moderate but observable effect on PTA ratification.

Dispute settlement mechanism

As argued in Section 3, if governments ratify PTAs to constrain their adversaries, then only PTAs with DSMs in majoritarian systems will have positive effects. If, on the other hand, electoral systems influence PTA ratification through other mechanisms, then we will find a positive association between the majoritarian rule and PTA ratification regardless of DSMs. Table 3 shows the regression results if we include DSMs. For PTAs without DSMs, a majoritarian system has a negative effect on their ratification, and the positive impact of the majoritarian rule is statistically

⁷A larger number of veto players leads to a higher transaction cost, which should make the ratification harder.

⁸The predicted probability of ratifying a PTA holding all variables at their means is 0.368%. The in-sample probability of ratifying a PTA is 0.712%.

Table 3: Dispute settlement mechanism

DV:	PTA ratification		
	DSM=0 (1)	DSM=1 (2)	Full sample (3)
Majoritarian	-0.579 (0.456)	0.174*** (0.048)	-1.848*** (0.429)
DSM			1.112*** (0.116)
Majoritarian \times DSM			2.029*** (0.429)
Clusters	290	2,888	3,137
Observations	4,360	31,058	35,470

Note: Regression in column (1) with fixed effects fails to converge due to the small sample size. Therefore, I only report results without fixed effects. Standard errors are clustered at day level. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

significant for PTAs with DSMs.⁹

Electoral prospects

As mentioned in Section 3, electoral prospects matter. I explore three related claims on electoral prospects in this subsection. First, governing parties under the majoritarian rule should be more responsive to vote share changes since the majoritarian rule magnifies electoral uncertainties. Moreover, when anticipating a losing election, governing parties should rush to ratify the PTA to lock in their policies. The majoritarian rule gives governments larger incentives to do so than PR because the current governing parties lose more under the majoritarian rule. When facing a winning election, governments should be no more likely to ratify a PTA.

Table 4 reports the regression results when I include the current government's vote margin of an upcoming election, whether the current government loses or wins the election, and their

⁹In the last column of Table 3, the coefficient of majoritarian system when DSM = 1 is 0.917(= 2.029 - 1.112) with $p < 0.001$.

Table 4: Electoral prospects

DV:	PTA ratification			
	(1)	(2)	(3)	(4)
Majoritarian	0.658*** (0.242)	0.646*** (0.211)	0.696*** (0.210)	0.661*** (0.210)
Vote margin	0.121 (0.211)			
Majoritarian \times Vote margin	-5.952*** (0.591)			
Losing election		0.359* (0.186)		0.338* (0.186)
Majoritarian \times Losing		2.055*** (0.252)		2.054*** (0.251)
Winning election			-0.110* (0.062)	-0.099 (0.062)
Majoritarian \times Winning			-0.109 (0.114)	-0.052 (0.116)
Year FE	Yes	Yes	Yes	Yes
Daydic FE	Yes	Yes	Yes	Yes
Clusters	1,830	2,126	2,126	2,126
Observations	28,543	35,964	35,964	35,964

Note: Standard errors are clustered at day level. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

interaction terms with the majoritarian rule respectively. As expected, I find that governments under the majoritarian rule are more likely to ratify PTAs when they receive fewer votes while those under PR are not responsive to vote share changes. Under both electoral rules, governments are more likely to ratify PTAs when they anticipate losing, but those under the majoritarian rule are much more likely to do so compared to their PR counterparts.

In the years when governments are facing winning elections, they do not behave differently regarding PTA ratification than years without an upcoming election. Knowing that a PTA can be ratified securely after the election, the governing parties may feel less pressure to ratify the PTA immediately. In addition, they might deliberately delay the ratification to get a better deal. These findings are all consistent with Hypothesis 3.

Two caveats are worth noting. Due to data constraint, the variables on winning and losing elections are defined using future true election results. For them to be relevant, I need to assume parties can more or less predict their electoral performance one year prior to the legislative elections, which seems innocuous. More importantly, using true election results risks reverse causality: it might be the case that losing an election is a result of ratifying a PTA. However, the result is unlikely driven by the reverse causality since existing literature shows that PTAs help incumbents win elections ([Mansfield and Milner, 2017](#)).

6 Alternative explanations and robustness check

Up to this point, I have shown there exists a robust positive association between the majoritarian rule and PTA ratification. However, one might still concern that reverse causality or omitted variable bias might drive the result. In this subsection, I deal with these concerns by ruling out several plausible alternative explanations and providing an instrumental variable (IV) regression.

Party system and the transaction cost mechanism

According to Duverger's law (Duverger, 1963; Riker, 1982), the majoritarian system tends to produce a two-party system while the PR system leads to a multi-party system. Although there are some counterexamples to Duverger's law, in general, majoritarian systems are associated with a smaller number of parties than PR systems. Hence, one might suspect that the positive association between the majoritarian rule and PTA ratification can be explained by the fact that PTAs are more difficult to get ratified in a more fragmented party system because of a longer bargaining process and a more diverse distribution of preferences in the legislature. Simply put, governments need to pay higher a transaction cost to ratify a PTA under PR.

To account for this mechanism, I have included *house fragmentation* in all specifications. The coefficient of the majoritarian rule is still statistically significant with the inclusion of *house fragmentation*. To further explore the transaction cost mechanism, I run a regression with an interactive effect between the majoritarian rule and *house fragmentation*. Also, I re-run this regression by replacing *house fragmentation* with the effective number of parties (*ENP*) in government. If the transaction cost mechanism is driving the result, *house fragmentation* and *ENP* should have similar effects in both electoral rules.

The results are reported in Table 5. As shown in this table, as party systems become more fragmented, the probability of PTA ratification does not go down in PR. In fact, a larger number of effective parties is associated with a higher probability of PTA ratification under PR. Therefore, the alternative mechanism that a higher transaction cost lead to a lower likelihood of PTA ratification is not supported by the empirics.

Moreover, if the transaction cost mechanism is driving the result, then to explain that governments ratify more PTAs before losing elections, it must be the case that the transaction cost is smaller when governments are about to lose power, which is very unlikely. If anything, the transaction cost should be higher before a losing election due to the lame duck effect.

Table 5: Party system

DV:	PTA ratification	
	(1)	(2)
Majoritarian	1.232*** (0.404)	1.145*** (0.258)
House fragmentation	-0.232 (0.409)	
Majoritarian \times fragmentation	-0.818* (0.496)	
ENP		0.086** (0.037)
Majoritarian \times ENP		-0.232*** (0.077)
Year FE	Yes	Yes
Daydic FE	Yes	Yes
Clusters	2,126	2,135
Observations	35,976	36,440

Note: Standard errors are clustered at dyad level. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Reverse causality

It is unlikely that PTA ratification has any effect on the choice of electoral system. For any country, which electoral rule to adopt is an important decision and is highly path-dependent while ratifying a PTA is relatively minor compared to choosing the electoral rule. Hence, the reverse causation is unlikely to be the case. However, one might still construct a theory that implies PTAs shape electoral rules. For example, according to [Katzenstein \(1985\)](#), inclusive institutions (consociationalism and corporatism in particular) help small European states to succeed in the global economy. Along with this line, one can make the following argument: PTAs open international markets to an economy; under the pressure of international competition, the society adjusts itself by adopting a more inclusive electoral system (e.g., PR); past experience with PTA is correlated with the current PTA decision. Under this argument, electoral rule is influenced by the past PTA experience and the correlation between electoral rule and contemporaneous PTA ratification is surprising.

To account for this slim possibility, I include a variable that counts the total number of PTAs that were previously ratified by each country. Results using this new variable are reported in [Table 6](#). From this table, we can see that past experience with PTAs has opposite signs depending on whether we control for dyadic fixed effects. Nevertheless, the impact of electoral system is unchanged.

Omitted variable bias

It is also unlikely that the omitted variable bias is driving the result. For this to be the case, there must exist a variable, which cannot be absorbed by dyadic and year fixed effects, affecting both a highly path-dependent institutional variable and a relatively minor decision. To account for remaining concerns for the omitted variable bias, I propose an IV regression. The instrument I use is whether country i is a former British colony. Former British colonies are prone to adopt the Westminster model and, hence, are more likely to have majoritarian systems. I also include year fixed effects to control for any long-term effects of colonialism. Note that since my depen-

Table 6: Past PTAs

DV:	PTA ratification	
	(1)	(2)
Majoritarian	0.149*** (0.053)	0.670*** (0.212)
# of past PTAs	0.014*** (0.004)	-0.025*** (0.005)
Year FE	Yes	Yes
Daydic FE		Yes
Clusters	17,969	2,126
Observations	256,104	35,976

Note: Standard errors are clustered at daydic level.

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

dent, independent, and instrumental variables are all binary, the standard two-stage least square regression is biased, especially when the outcome probability is close to 0 or 1 (Chiburis, Das and Lokshin, 2012). Instead, I run a bivariate probit model recommended by Wooldridge (2010). Because the coefficients from a bivariate probit model cannot directly be compared to those obtained from logit, I also re-run the baseline model using probit with year fixed effects for the purpose of comparison. The results from the IV regression and the conventional probit are reported in Table 7. One can see that the positive effect of the majoritarian system is much larger when instrumented. Therefore, even if the simple probit regression is biased, it is biased towards zero. The marginal effects calculated using model (1) in Table 2 are conservative estimates of the real impact of electoral systems on PTA ratification.

Robustness check

One might suspect that the coefficients are biased since PTA ratification may be considered rare events.¹⁰ Following the advice of King and Zeng (2001), I run a rare event logit regression, which

¹⁰King and Zeng (2001) identify that conventional logistic regressions may produce biased estimates in finite samples of rare event data. In my sample, the probability of PTA ratification

Table 7: IV regression

DV:	PTA ratification (Second Stage) (1)	Majoritarian (First Stage) (2)	PTA ratification (Conventional probit) (3)
Majoritarian	0.152*** (0.049)		0.079*** (0.022)
British Colony		1.188*** (0.033)	
Year FE	Yes	Yes	Yes
Clusters	14,267		17,969
Observations	201,872		256,104

Note: Columns (1) and (2) are bivariate probit regressions with dependent variables *PTA ratification* and *Majoritarian*, respectively. Column (3) is conventional probit regression with dependent variable *PTA ratification* for comparison purpose. Standard errors are clustered at dayd level. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

is reported in the first column in Table 8. One can see that the coefficients do not change.

One might also suspect that the results are driven by outliers such as the US or the European Union (EU) countries. Hence, I exclude the US and EU member states, respectively. Their results are reported in the last two columns of Table 8. One can see that the impact of electoral systems on PTA ratification is qualitatively unchanged. Moreover, when excluding EU countries, I find the effect of the majoritarian rule goes up. This finding can be explained as follows. Because of the European integration process, a large number of PTAs have been ratified between EU members. These PTAs are not driven by the concern of constraining oppositions. However, most continental European states have PR systems. Thus, the inclusion of European countries is likely to bias the coefficient of the majoritarian rule towards zero.

is only 0.7%. However, due to the large sample size, the total number of ratified PTAs is 4,868. Thus, the conventional logit regression is unlikely to bias a lot. The result from rare event logit (column (1) in Table 8) substantiate this conjecture.

Table 8: Robustness check

DV:	PTA ratification		
	Rare event (1)	Exclude EU (2)	Exclude US (3)
Majoritarian	0.150*** (0.052)	0.875*** (0.251)	0.636*** (0.211)
House fragmentation	-0.558*** (0.176)	-0.838*** (0.300)	-0.789*** (0.272)
Polity2	-0.047*** (0.017)	0.335*** (0.049)	0.285*** (0.046)
Veto	-0.269 (0.192)	0.036 (0.302)	0.448 (0.278)
Year FE		Yes	Yes
Daydic FE		Yes	Yes
Clusters	17,981	1,769	2,112
Observations	277,023	26,863	35,584

Note: Standard errors are clustered at day level. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

7 Conclusion

This paper empirically examines whether electoral rules and electoral prospects influence government's decision on PTA ratification. In particular, I find governments are more likely to ratify PTAs in majoritarian systems and before losing elections.

These findings can be explained by government's demand for constraining their successors. Unlike domestic channels, PTAs can provide invaluable devices for governments to constrain their adversaries since PTAs are enforced by international actors. Under this mechanism, governments in majoritarian systems, compared to their PR counterparts, are more likely to ratify PTAs because they are more likely to lose and they lose more.

This paper connects and fills a gap between the international relations literature on international trade and the comparative politics literature on electoral rules. It shows electoral institutions and electoral prospects can influence international politics through shaping party behavior. One natural extension of this paper is examining how other domestic political institutions shape

party behavior on trade-related decisions.

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Online Appendix

A Variable definitions

Following [Mansfield and Milner \(2012\)](#), I include the following control variables in this paper: the log of trade between two countries, lagged value of $\log(GDP)$ in country i , the change of country i 's GDP from the last to the current year (ΔGDP), openness of country i , the GDP Ratio between two states, $(\log(\frac{\max_{k \in \{i,j\}} GDP_{k,t-1}}{\min_{k \in \{i,j\}} GDP_{k,t-1}}))$, if there exists an ongoing conflict between country i and j (*Conflict*), if both countries are European Union members, if the two countries share a common border (*Contiguous*), the log of capital distance between two countries ($\log(Capital Distance)$), if there exists an effective PTA between country i and j (*Existing PTA*), if both countries are GATT/WTO members, if the two countries in a dyad have formed any kind of alliance previously (*Alliance*), post cold war ($Year \geq 1989$), the proportion of global GDP produced by the US each year (*Hegemony*), % of dyads ratifying a PTA in the previous year, and if there is a colonial relationship between two countries (*Former colony*).

B Supplementary tables

Table B.1: Summary Statistics (full table)

VARIABLES	N	mean	sd	min	max
PTA ratification	683,627	0.00712	0.0841	0	1
DSM	68,181	0.897	0.304	0	1
Polity2	406,555	8.78	1.415	6	10
Veto	536,532	0.362	0.177	0	0.710
Post cold war	683,627	0.597	0.491	0	1
log(Distance)	619,625	8.291	0.810	1.609	9.421
Both EU members	683,627	0.00978	0.0984	0	1
Existing PTA	683,627	0.0621	0.241	0	1
% dyads ratifying PTA	683,627	0.00803	0.00829	0	0.0314
Former colony	683,627	0.00743	0.0859	0	1
log(Trade)	660,797	-1.685	5.174	-6.908	13.02
log(GDP)	567,566	17.07	2.522	9.397	23.09
GDP ratio	554,523	2.688	1.965	1.02e-05	13.68
Hegemony	596,129	0.218	0.0169	0.204	0.287
Conflict	660,797	0.000522	0.0228	0	1
Alliance	660,797	0.111	0.314	0	1
Contiguity	601,699	0.0302	0.171	0	1
GATT/WTO	660,797	0.424	0.494	0	1
Δ GDP	559,015	0.0778	0.473	-18.63	5.090
Openness	554,936	84.94	48.77	5.725	438.1
House fragmentation	427,246	0.610	0.204	0	1
Parliamentary	459,248	0.609	0.488	0	1
Majoritarian	431,114	0.466	0.499	0	1
British Colony	501,797	0.446	0.497	0	1
# of past PTAs	660,797	0.667	2.865	0	50
Losing election	403,234	0.0153	0.123	0	1
Winning election	403,234	0.236	0.425	0	1
ENP	433,307	2.197	5.486	1	50
Vote margin	325,380	0.0246	0.152	-0.621	1

Table B.2: Baseline results (full table)

DV:	PTA ratification			
	(1)	(2)	(3)	(4)
Majoritarian	0.150*** (0.052)	0.145*** (0.053)	0.487*** (0.172)	0.670*** (0.211)
House fragmentation	-0.560*** (0.176)	-0.857*** (0.181)	-0.063 (0.263)	-0.784*** (0.271)
Polity2	-0.047*** (0.017)	-0.039** (0.017)	0.257*** (0.043)	0.281*** (0.046)
Veto	-0.266 (0.192)	-0.044 (0.196)	0.057 (0.261)	0.468* (0.277)
log(Trade)	0.023*** (0.005)	0.027*** (0.006)	0.026** (0.012)	0.045*** (0.013)
log(GDP)	-0.112*** (0.019)	-0.142*** (0.019)	1.698*** (0.183)	1.594*** (0.296)
Δ GDP	-0.212 (0.134)	-0.073 (0.092)	-0.507*** (0.143)	-0.291*** (0.109)
Openness	-0.001 (0.001)	-0.001* (0.001)	0.006*** (0.002)	0.009*** (0.002)
Parliamentary	0.167*** (0.055)	0.139** (0.054)	0.998*** (0.139)	0.777*** (0.141)
GDP ratio	-0.104*** (0.014)	-0.109*** (0.014)	-0.527*** (0.148)	-0.559*** (0.154)
Conflict	-0.496 (0.723)	-0.481 (0.675)	-1.340* (0.691)	-1.295** (0.645)
Both EU members	-1.161*** (0.106)	-1.047*** (0.107)	-0.761*** (0.105)	-0.208* (0.125)
Former colony	-1.667** (0.715)	-1.663** (0.718)		
Contiguity	-1.010*** (0.087)	-1.038*** (0.089)	1.575** (0.707)	1.691** (0.724)
log(Distance)	-1.074*** (0.029)	-1.114*** (0.030)		
Existing PTA	0.585*** (0.055)	0.549*** (0.057)	-1.352*** (0.092)	-1.442*** (0.087)
GATT/WTO	0.542*** (0.048)	0.579*** (0.050)	0.630*** (0.078)	0.794*** (0.086)
Alliance	0.569*** (0.057)	0.573*** (0.059)	-0.611*** (0.113)	-0.637*** (0.127)
Post cold war	1.166*** (0.071)		0.491*** (0.087)	
Hegemony	-55.713*** (6.689)		-57.648*** (6.856)	
% dyads ratifying PTA	21.878*** (2.225)		13.723*** (2.452)	
Constant	17.285*** (1.455)			
Year FE		Yes		Yes
Daydic FE			Yes	Yes
Clusters	17,981	17,969	2,126	2,126
Observations	277,023	256,104	35,976	35,976

Standard errors are clustered by dyads. *** p<0.01, ** p<0.05, * p<0.1

Table B.3: Dispute settlement mechanism (full table)

DV:	PTA ratification		
	DSM=0 (1)	DSM=1 (2)	Full sample (3)
Majoritarian	-0.579 (0.456)	0.174*** (0.048)	-1.848*** (0.429)
DSM			1.112*** (0.116)
Majoritarian × DSM			2.029*** (0.429)
House fragmentation	0.726 (1.281)	0.010 (0.182)	0.013 (0.177)
Polity2	-0.478*** (0.113)	-0.007 (0.017)	-0.015 (0.017)
Veto	2.036* (1.150)	-0.148 (0.222)	-0.087 (0.216)
log(Trade)	-0.122*** (0.038)	0.021*** (0.005)	0.015*** (0.005)
log(GDP)	0.040 (0.104)	-0.116*** (0.019)	-0.100*** (0.018)
Δ GDP	-2.690*** (0.503)	-0.040 (0.133)	-0.141 (0.143)
Openness	0.002 (0.004)	0.001** (0.001)	0.002** (0.001)
Parliamentary	-0.717** (0.345)	-0.045 (0.055)	-0.078 (0.055)
GDP ratio	-0.393*** (0.092)	0.049*** (0.014)	0.031** (0.013)
Contiguity	0.224 (0.485)	-0.092 (0.071)	-0.074 (0.071)
log(Distance)	-0.432* (0.240)	-0.132*** (0.031)	-0.129*** (0.032)
Existing PTA	-2.516*** (0.409)	-0.944*** (0.047)	-0.950*** (0.047)
GATT/WTO	-0.148 (0.287)	0.072 (0.051)	0.043 (0.050)
Alliance	0.895*** (0.328)	-0.026 (0.055)	0.004 (0.054)
Post cold war	0.486** (0.213)	0.917*** (0.079)	0.832*** (0.074)
Hegemony	9.880 (31.707)	-69.197*** (6.787)	-67.466*** (6.570)
% dyads ratifying PTA	-5.812 (15.700)	10.259*** (2.440)	9.467*** (2.383)
Conflict		-0.389 (0.738)	-0.384 (0.769)
Both EU members		-0.688*** (0.092)	-0.660*** (0.092)
Former colony		-1.390* (0.763)	-1.393* (0.761)
Constant	6.592 (7.344)	14.867*** (1.473)	13.356*** (1.438)
Clusters	290	2,888	3,137
Observations	4,360	31,058	35,470

Standard errors are clustered by dyads. *** p<0.01, ** p<0.05, * p<0.1

Table B.4: Electoral prospects (full table)

DV:	PTA ratification			
	(1)	(2)	(3)	(4)
Majoritarian	0.658*** (0.242)	0.646*** (0.211)	0.696*** (0.210)	0.661*** (0.210)
Vote margin	0.121 (0.211)			
Majoritarian × Vote margin	-5.952*** (0.591)			
Losing election		0.359* (0.186)		0.338* (0.186)
Majoritarian × Losing		2.055*** (0.252)		2.054*** (0.251)
Winning election			-0.110* (0.062)	-0.099 (0.062)
Majoritarian × Winning			-0.109 (0.114)	-0.052 (0.116)
House fragmentation	-0.652* (0.336)	-0.844*** (0.283)	-0.758*** (0.271)	-0.827*** (0.284)
Polity2	0.089 (0.055)	0.283*** (0.046)	0.281*** (0.045)	0.283*** (0.046)
Veto	0.513 (0.340)	0.584** (0.279)	0.491* (0.277)	0.607** (0.279)
log(Trade)	0.052*** (0.016)	0.040*** (0.013)	0.045*** (0.013)	0.040*** (0.013)
log(GDP)	1.890*** (0.322)	1.535*** (0.296)	1.595*** (0.295)	1.534*** (0.295)
Δ GDP	-0.297*** (0.107)	-0.281*** (0.109)	-0.267** (0.105)	-0.264** (0.107)
Openness	0.005** (0.002)	0.011*** (0.002)	0.009*** (0.002)	0.010*** (0.002)
Parliamentary	1.475*** (0.195)	0.758*** (0.139)	0.790*** (0.141)	0.767*** (0.139)
GDP ratio	-0.630*** (0.175)	-0.563*** (0.155)	-0.556*** (0.154)	-0.561*** (0.155)
Conflict	0.137 (0.724)	-1.341** (0.613)	-1.305** (0.619)	-1.351** (0.596)
Both EU members	-0.223* (0.129)	-0.215* (0.125)	-0.212* (0.125)	-0.218* (0.125)
Contiguity	1.618** (0.761)	1.650** (0.726)	1.677** (0.727)	1.642** (0.729)
Existing PTA	-1.308*** (0.094)	-1.432*** (0.088)	-1.439*** (0.087)	-1.430*** (0.088)
GATT/WTO	0.564*** (0.093)	0.733*** (0.087)	0.793*** (0.086)	0.734*** (0.086)
Alliance	-0.743*** (0.149)	-0.577*** (0.126)	-0.618*** (0.126)	-0.560*** (0.126)
Post cold war	-4.413*** (0.532)	-4.221*** (0.519)	-4.239*** (0.515)	-4.208*** (0.520)
Hegemony	-710.349*** (42.860)	-697.234*** (42.575)	-706.479*** (42.423)	-697.095*** (42.650)
% dyads ratifying PTA	-214.330*** (9.232)	-212.153*** (8.988)	-214.629*** (8.909)	-211.615*** (8.984)
Year FE	Yes	Yes	Yes	Yes
Daydic FE	Yes	Yes	Yes	Yes
Clusters	1,830	2,126	2,126	2,126
Observations	28,543	35,964	35,964	35,964

Standard errors are clustered at day level. *** p<0.01, ** p<0.05, * p<0.1

Table B.5: Party system (full table)

DV:	PTA ratification	
	(1)	(2)
Majoritarian	1.232*** (0.404)	1.145*** (0.258)
House fragmentation	-0.232 (0.409)	
Majoritarian \times fragmentation	-0.818* (0.496)	
ENP		0.086** (0.037)
Majoritarian \times ENP		-0.232*** (0.077)
Polity2	0.279*** (0.046)	0.284*** (0.046)
Veto	0.564** (0.278)	0.091 (0.243)
log(Trade)	0.044*** (0.013)	0.047*** (0.013)
log(GDP)	1.601*** (0.296)	1.662*** (0.295)
Δ GDP	-0.282*** (0.107)	-0.305*** (0.110)
Openness	0.009*** (0.002)	0.009*** (0.002)
Parliamentary	0.738*** (0.137)	0.761*** (0.139)
GDP ratio	-0.560*** (0.154)	-0.562*** (0.154)
Conflict	-1.275* (0.656)	-1.256* (0.641)
Both EU members	-0.204 (0.125)	-0.184 (0.125)
Contiguity	1.681** (0.726)	1.667** (0.726)
Existing PTA	-1.436*** (0.087)	-1.453*** (0.087)
GATT/WTO	0.795*** (0.086)	0.809*** (0.087)
Alliance	-0.632*** (0.127)	-0.633*** (0.126)
Year FE	Yes	Yes
Daydic FE	Yes	Yes
Clusters	2,126	2,135
Observations	35,976	36,440

Standard errors are clustered by dyads. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Table B.6: Past PTAs (full table)

DV:	PTA ratification	
	(1)	(2)
Majoritarian	0.149*** (0.053)	0.670*** (0.212)
# of past PTAs	0.014*** (0.004)	-0.025*** (0.005)
House fragmentation	-0.838*** (0.181)	-0.839*** (0.278)
Polity2	-0.036** (0.017)	0.291*** (0.047)
Veto	-0.030 (0.196)	0.477* (0.278)
log(Trade)	0.027*** (0.006)	0.045*** (0.013)
log(GDP)	-0.141*** (0.019)	1.599*** (0.299)
Δ GDP	-0.070 (0.091)	-0.291*** (0.110)
Openness	-0.001* (0.001)	0.009*** (0.002)
Parliamentary	0.134** (0.054)	0.888*** (0.150)
GDP ratio	-0.108*** (0.014)	-0.571*** (0.155)
Conflict	-0.475 (0.673)	-1.278** (0.648)
Both EU members	-1.057*** (0.107)	-0.096 (0.126)
Former colony	-1.665** (0.717)	
Contiguity	-1.034*** (0.089)	1.694** (0.722)
log(Distance)	-1.111*** (0.030)	
Existing PTA	0.546*** (0.056)	-1.456*** (0.088)
GATT/WTO	0.575*** (0.050)	0.828*** (0.087)
Alliance	0.584*** (0.058)	-0.659*** (0.127)
Year FE	Yes	Yes
Daydic FE		Yes
Clusters	17,969	2,126
Observations	256,104	35,976

Standard errors are clustered by dyads. *** p<0.01, ** p<0.05, * p<0.1

Table B.7: IV regression (full table)

DV:	PTA ratification (Second Stage) (1)	Majoritarian (First Stage) (2)	PTA ratification (Conventional probit) (3)
Majoritarian	0.152*** (0.049)		0.079*** (0.022)
British Colony		1.188*** (0.033)	
House fragmentation	-0.330*** (0.084)	-2.491*** (0.059)	-0.437*** (0.076)
Polity2	-0.014* (0.008)	0.016* (0.008)	-0.022*** (0.007)
Veto	-0.096 (0.093)	1.105*** (0.060)	0.024 (0.086)
log(Trade)	0.014*** (0.003)	0.004 (0.003)	0.013*** (0.002)
log(GDP)	-0.040*** (0.009)	-0.106*** (0.010)	-0.064*** (0.008)
Δ GDP	0.027 (0.036)	0.984*** (0.042)	0.006 (0.033)
Openness	-0.000 (0.000)	-0.005*** (0.000)	-0.001** (0.000)
Parliamentary	0.067*** (0.025)	0.251*** (0.030)	0.064*** (0.022)
GDP ratio	-0.041*** (0.007)	0.041*** (0.007)	-0.046*** (0.006)
Conflict	-0.401 (0.263)	-0.087 (0.411)	-0.306 (0.275)
Both EU members	-0.655*** (0.102)	-6.064*** (0.070)	-0.510*** (0.047)
Former colony	-4.674*** (0.117)	0.568** (0.261)	-0.445* (0.246)
Contiguity	-0.398*** (0.048)	0.216** (0.089)	-0.396*** (0.040)
log(Distance)	-0.557*** (0.015)	0.243*** (0.021)	-0.506*** (0.013)
Existing PTA	0.181*** (0.031)	0.327*** (0.051)	0.248*** (0.025)
GATT/WTO	0.261*** (0.024)	-0.150*** (0.023)	0.249*** (0.021)
Alliance	0.188*** (0.027)	-0.104** (0.044)	0.233*** (0.024)
Year FE	Yes	Yes	Yes
Clusters	14,267		17,969
Observations	201,872		256,104

Standard errors are clustered by dyads. *** p<0.01, ** p<0.05, * p<0.1

Table B.8: Robustness check (full table)

DV:	PTA ratification		
	Rare event (1)	Exclude EU (2)	Exclude US (3)
Majoritarian	0.150*** (0.052)	0.875*** (0.251)	0.636*** (0.211)
House fragmentation	-0.558*** (0.176)	-0.838*** (0.300)	-0.789*** (0.272)
Polity2	-0.047*** (0.017)	0.335*** (0.049)	0.285*** (0.046)
Veto	-0.269 (0.192)	0.036 (0.302)	0.448 (0.278)
log(Trade)	0.023*** (0.005)	0.054*** (0.014)	0.046*** (0.013)
log(GDP)	-0.113*** (0.019)	1.868*** (0.369)	1.674*** (0.299)
Δ GDP	-0.202 (0.134)	0.105 (0.123)	-0.868*** (0.259)
Openness	-0.001 (0.001)	0.011*** (0.002)	0.010*** (0.002)
Parliamentary	0.166*** (0.055)	0.838*** (0.168)	0.786*** (0.142)
GDP ratio	-0.104*** (0.014)	-0.646*** (0.185)	-0.548*** (0.155)
Conflict	-0.013 (0.723)	-1.416** (0.677)	-1.277* (0.662)
Both EU members	-1.158*** (0.106)		-0.160 (0.127)
Contiguity	-1.009*** (0.087)	31.809** (15.183)	1.602** (0.728)
Existing PTA	0.585*** (0.055)	-2.087*** (0.110)	-1.430*** (0.087)
GATT/WTO	0.541*** (0.048)	0.704*** (0.099)	0.796*** (0.087)
Alliance	0.569*** (0.057)	-0.819*** (0.144)	-0.653*** (0.125)
Post cold war	1.164*** (0.071)		
Hegemony	-55.735*** (6.688)		
% dyads ratifying PTA	21.880*** (2.225)		
Former colony	-1.419** (0.716)		
log(Distance)	-1.074*** (0.029)		
Constant	17.295*** (1.455)		
Year FE		Yes	Yes
Daydic FE		Yes	Yes
Clusters	17,981	1,769	2,112
Observations	277,023	26,863	35,584

Standard errors are clustered by dyads. *** p<0.01, ** p<0.05, * p<0.1