Electoral Systems and Trade-Policy Outcomes

The Effects of Personal-Vote Incentives on Barriers to International Trade

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Version: 23 June 2017

Despite the established benefits of free trade, protectionism persists to varying degrees across the world. Why is this? Within most countries there are political forces which advocate both for protectionist and liberal trade policies. Political institutions govern the ways in which these competing preferences are aggregated, shaping policy outcomes. The ubiquitous binary PR/plurality indicator in the trade-politics literature is divorced from comparative institutional research. We build on this latter body of research to generate a 13-point index that captures the extent to which electoral systems incentivize personal-vote cultivation. We argue that institutional incentives to pursue a personal vote are positively linked to the provision of trade protectionism. We find strong empirical support for our argument, primarily from REWB and 2SLS models. Our results highlight the importance of applying parsimonious approaches to studying domestic institutions when analyzing their impact on foreign economic policy.

A previous version of this paper was previously presented at the World Trade Institute in February 2017. We thank Manfred Elsig, Thomas Gift, Lauge Poulsen, Damian Raess, and participants at the World Trade Institute workshop for helpful comments.

The benefits of free trade are well-established and widely accepted. Yet, despite the theoretical and empirical evidence of these benefits, trade liberalization is not pursued with the vigour that the discourse its proponents use would imply. Many states maintain protectionist barriers to varying degrees, some of them quite high. Why is this? Within most countries there are political forces which advocate both for protectionist and liberal trade policies. Political institutions aggregate these competing preferences, shaping policy outcomes. In this paper, we propose a parsimonious approach to studying the effect of electoral systems on trade policy through the incentives they provide candidates to pursue the cultivation of a personal vote.

Previous work on this subject has produced contradictory and inconclusive results, a consequence of simplistic modelling of electoral-system variation. With few exceptions, it has been operationalized dichotomously, with systems labelled as either plurality (or majoritarian) or proportional representation (PR). Influenced by works such as Carey and Shugart (1995), and in response to the contradictory results of past publications, Menochal (2009) and Rickard (2015) suggest that further research is needed, which disaggregates the electoral systems within the plurality and PR categories. In this paper, we argue that electoral systems that incentivize personal vote cultivation in legislators should lead to more protectionist trade policies, and propose a more parsimonious method for analysing the relationship between electoral institutions and trade policy. This includes a more nuanced independent variable which accounts for greater variation among electoral systems and thus their effects on trade policy outcomes. We find significant support for the link between personal-vote incentives and protectionist trade policies. We capture trade policy using three different measures and find the relationship between our institutional measure and protection to be robust across a range of econometric specifications.

The PR-Majoritarian Divide and Protectionism

Political-economic research on the effects of electoral institutions on trade policy typically classifies the institutions in a binary fashion: either plurality/majoritarianism or proportional representation (PR). Consequently, the conclusions reached often fall on either side of a central debate: that either plurality or PR leads to more protectionist policies.

The framework for this discourse was first popularized in the seminal paper by Rogowski (1987), who proposes a correlation between PR systems and more open trade policies. This affinity between PR and free trade is attributed to the former's tendency to produce relatively fewer, larger electoral districts and strong, autonomous parties, as well as its ability to provide an insulating effect against trade-based exogenous shocks. This work, and the PR-plurality divide that it

highlights, have been integral to the development of the body of research on electoral institutions and trade politics, as well as electoral institutions and economic-policy outcomes more generally.

Among the influential work examining electoral systems and economic policy, Persson and Tabellini (2003; PT henceforth) find that PR systems are correlated with broadly beneficial policies and plurality systems lead to targeted, narrowly beneficial policies. PT contend that the higher average district magnitude in PR systems should produce fewer incentives for legislators to seek rents or cultivate a personal vote. As such, plurality rules should correspond with more trade protection due to greater receptiveness to lobbying by firms or industries which are or would be vulnerable to competition with more competitive foreign firms. Other scholars reach analogous conclusions with different arguments: Knutsen (2011) argues the landslide win under plurality rules leads to greater rent-seeking and particularistic policy-making by legislators; Saksena and Anderson (2008) attribute the link between PR systems and liberal trade policies to the insulation of politicians from special interest lobbying. Ito (2015), Grossman and Helpman (2005), and Hatfield and Hauk (2014; HH from now on) all find evidence of a relationship between PR systems and freer trade policy in panel analyses across a range of samples.

On the other side of the debate over the relationship between electoral systems and protectionism, Mansfield and Busch (1995) contend that the insulation of politicians in PR systems, rather than reducing the impact of special-interest politics, instead leads to greater rent-seeking, and thus more protectionism. Rogowski and Kayser (2002), Chang et al. (2008), and Weinberg (2012) propose analogous arguments, finding support in consumer price levels which they treat as a proxy for trade policy liberalization. However, as Rickard (2012) observes, consumer prices capture a wide range of influences, including transportation costs, market size and consumer preferences, obfuscating the link between prices and protectionism.

To this point, this brief review highlights the contradictions and inconclusiveness in prior research on the effects of electoral institutions on trade policy. Despite reliance on comparable theoretical foundations, modeling techniques, and samples, researchers have reached opposing conclusions. This critique is far from new, as Park and Jensen (2007), Menochal (2009), Ehrlich (2011) and Rickard (2012) have all noted that this lack of consensus may be attributable to a misconception traceable back to the seminal paper by Rogowski (1987). The complexity of electoral institutions' effects on economic policy cannot be adequately captured by a simple binary variable. PT, Blume et al. (2009), and Evans (2009) all recognize the limitations of the rough proportionality dichotomy, and seek to address it in different ways. PT use a mixed-system binary indicator and continuous institutional variables, albeit primarily as a serious of robustness checks. Blume et al. (2009) highlight the importance of more detailed measures than the dichotomous

indicator. Evans (2009) acknowledges mixed systems, but the operationalization is largely excluded from her analyses. A binary term for mixed systems will suffer from the same constraints as one for the PR-plurality divide: the indicator captures a wide range of systems (such as mixed-member proportional [MMP] in Germany and mixed-member majoritarian [MMM]) in Japan, all of which can have wildly different effects on economic-policy outcomes, as demonstrated in the comparative institutional literature by Thames and Edwards (2006) and Shugart and Wattenberg (2003).

Our approach to obtaining a more nuanced electoral-system measure through an index is not unprecedented in the research on electoral politics and trade protection. Nielsen (2003) applies a similar index to the study of tariffs among middle-income presidential democracies, and Crisp et al. (2010) take an analogous approach to explaining exceptions in investment treaties. Furthermore, Nielsen (2003) and Rickard (2005) call for further and more generalizable research on the effects of electoral institutions on trade policy. We pick up where the existing literature leaves off, by incorporating a theory-based index alternative to the conventional binary approach to institutions.

Incentives to Cultivate a Personal Vote and Trade Protection

The effects of political institutions on interest aggregation have been the subject of extensive theoretical and empirical work across political science and political economy. The significant advances in these fields have not extended to the study of trade politics, which has been hampered by simplistic institutional modeling. As Shugart (2005) observes, the plurality-PR divide, which dominates prior research, is no more important than whether voters can choose individuals or from closed party lists. Within the broad PR and majoritarian electoral families there are several different electoral systems, the effects of which more closely resemble systems from the opposite class than those they have been grouped alongside. This can lead to heterogeneous within-category effects and contradictory results, despite conducting similar analyses. We rely on insights from the comparative-politics literature on electoral institutions, particularly Carey and Shugart (1995), Shugart (2005), and Cox and McCubbins (2001), to create a more theoretically grounded measure of institutional effects on politicians' incentives, and consequently, economic-policy outcomes.

Electoral Incentives and the Personal Vote

The incentive structures of both political candidates and elected officials are directly shaped in substantial ways by the rules that govern electoral competition, as well as the impact of those rules on voters' information demands (Cox and McCubbins, 2001). Operating under the constraints of limited time and information, voters in a democracy often rely on the signals

provided by parties and candidates for information when making their choice in an election. The type of signals in demand among voters – and those provided in response by politicians seeking election – depends on the nature of their electoral institutions. In party-centric electoral systems, such as South Africa's closed-list PR (CLPR), voters only require information on parties' policy platforms, as these distinguish each party (or bloc or coalition). If the electoral institutions allow voters to select candidate-specific preferences (such as in open-list PR, single non-transferable vote (SNTV) and plurality systems), voters will seek information on candidates, as it becomes necessary to distinguish them from their counterparts both within and across parties. Such institutions foster intraparty competition in addition to interparty competition (Cox and McCubbins, 2001; Crisp et al., 2007); in order to pursue (re)election, politicians in these circumstances will need to create a connection between themselves and their constituency beyond that provided by their party's reputation and platform.

Where electoral institutions incentivize the cultivation of a personal vote by fostering greater intraparty competition than interparty competition, conflicts of interests may arise between candidates and their respective party leaders (Carey and Shugart, 1995). While candidates are interested primarily in their own (re)election, parties and party leaders are interested in maximizing the total number of seats won in the district and legislature. Within personal-vote systems, maintaining party reputation becomes a collective-action problem, the extent of which is significantly determined by electoral rules and the extent to which they incentivize the cultivation of a personal vote.

In party-focused electoral systems, such as CLPR, a distinct and clearly defined party brand benefits the party as a whole, and party leaders have an incentive to discourage any independent candidate behaviors that deviate from the party line. Party leaders' control over candidates' electoral prospects, such as inclusion on the party list and its order, will pressure candidates to conform to the party platform at the risk of being moved down or off of the list. Candidate interests are thus closely aligned with those of party leaders, and because party reputation is capable of meeting both candidate and leaders' goals, there are few incentives to pursue a personal vote. Conversely, the more candidate-centric the electoral system is, the greater the likelihood is that candidates will pursue the cultivation of their own reputations, as these will have greater weight relative to that of the party. Since the party's reputation is available to all co-partisans, it is less useful as a means for differentiating individual politicians within the party, giving them incentive to act in ways that may counter the party platform; this, in turn, generates the reduced party cohesion associated with personal-vote systems (Cox and McCubbins, 2001). As candidates cater to the narrowly-defined interests within their districts to gain (re)election, they often support and

enact particularistic policies, which benefit these narrow groups at the expense of providing broader-based public goods. These policies contribute greatly to candidates' personal reputations, while policies with broadly diffuse benefits serve to bolster the party's regional or national reputation. Furthermore, in more candidate-centric systems, party leaders are less able to leverage control over individual candidate's electoral prospects reducing their ability to control individual's behaviour, such as pursuing particularistic policies

Capturing the latent incentives created by electoral institutions is a difficult task that has led to divergent recommendations for measurement. André et al. (2016) advocate an interview-based approach, relying on legislators' self-reported assessments of their electoral environment. A frequent shortcoming of such self-reported approaches is the susceptibility to interviewee misrepresentation, particularly when interviewees have incentives to misrepresent their incentives systematically across electoral systems. Others rely on outcomes as proxies: some researchers have advocated simply observing legislators' actions and drawing inferences from them after the fact. This observational behavioral approach lacks a theoretical foundation and may be subject to individual interpretation, especially when motives may be mixed. A final approach is based on theoretical measurements derived from the hypothetical effects that particular institutional arrangements have on candidate incentives. This is the method we apply in assessing institutional incentives for candidates to cultivate a personal vote.

Carey and Shugart (1995; CS henceforth) define four variables which they argue affect the degree to which electoral institutions incentivize cultivation of a personal vote. These variables are ballot control, vote pooling, types of votes, and district magnitude; and are combined to create a rank order of electoral systems based on personal-vote cultivation incentives. The first variable, ballot control, refers to whether or not parties control party endorsement and, if they do, whether they control ballot ranking (in the case of party lists). Vote pooling refers to whether votes pool across the whole of the party, among certain candidates or factions (such as in PR with a single transferrable vote [STV]), or there is no vote pooling at all. Types of votes relates to the design of the voting mechanism itself: whether citizens have one or multiple votes and whether they vote for individuals or parties. The authors score each of these first three variables on a scale of zero to two where higher scores indicate greater personal-vote value. Any score increase for any of these first three variables always increases the value of personal reputation relative to party reputation, *ceteris paribus*. District magnitude's (M) effect on personal-vote incentives is conditional on the combined score of pooling, ballot and vote types for each system, and the degree to which the system creates intraparty competition and thus incentivizes personal vote cultivation. In all systems with intraparty competition, growth in M is positively associated with personal-vote incentives.

Where there is no intraparty competition, such as CLPR, the growth of M should be inversely related to the value of the personal vote, as each largely anonymous candidate becomes further obscured by a growing and faceless party pool.

The effects of these four institutional characteristics should remain more or less fixed across countries with readily defined electoral systems. An open-list system with multiple votes in one country will have similar effects on legislators as it does in another, *ceteris paribus*. This being the case, the effects of institutions and institutional variation between, as well as within, countries on international trade or other economic policy outcomes should be more or less consistent and measurable, with sufficient controls in place.

Political Incentives and Trade Policy

Having illustrated how electoral institutions can shape the incentives political actors face, the question remains: how does this impact international trade policy and economic policy more generally? The welfare-enhancing effects of trade liberalization are well established (add econ citation), and across political economy, gains from liberalization are treated as a public good (see, for example, Rogowski, 1987; Grossman and Helpman, 1994; HH, 2014). Consumers are generally the primary beneficiaries of the diffuse benefits of trade; these are complemented by some private-good benefits for some producers, which has been highlighted by recent research into producer heterogeneity and trade (Bernard et al., 2007; Plouffe, 2015 and 2017). In contrast, protectionist policies have narrow benefits, which accrue to protected industries, firms, and other subpopulations which advocate most vocally for such policies (see, among others, Grossman and Helpman, 1994). The costs of these policies, both in the forms of tariffs or non-tariff barriers (NTBs) are then passed on to the population-at-large via higher prices, possible supply shortages, and a less productive, competitive, and innovative economy.

The largely public-good nature of trade liberalization lies in stark contrast with the particularistic character of protectionism. This creates a distinct division in trade policy's political consequences, which can be mapped onto politicians' institutionally-derived incentives to pursue a personal vote. In systems where legislators have a stronger incentive to develop a personal vote, they can use targeted, narrow policies (such as pork politics in the United States) to that end. Conversely, where competition for votes is largely between parties and votes are pooled, the party brand will be of primary importance, and politicians will face greater incentives to pursue policies that are broadly beneficial public goods. In the case of trade policy, this will lead to more restrictive trade policies where electoral systems incentivize personal-vote cultivation, and more open trade policies in electoral systems that create less intraparty conflict, thus dis-incentivizing legislators' needs to cultivate a personal vote.

Research Design and Methodology

Dataset and Model Specification

As with any study of the effects of electoral systems, the population of interest is confined to democracies. We use the Varieties of Democracy (V-Dem) Polyarchy scale (Coppedge et al., 2016) as our starting point, with its focus on competition and participation in political systems. As the original Polyarchy dataset's creator Tatu Vanhanen notes, democracy can be defined as a "political system in which power is widely distributed among its members and in which the status of power holders is based on the consent of the people" (Vanhanen 1984: 11). We limit the sample to countries scoring 0.4 or higher on the Polyarchy scale, which provides a compromise between inclusiveness and the capture of highly democratic countries. Admittedly, this does lead to the inclusion of hybrid regimes and, in some cases, country-year observations that may only be described as notionally democratic, but any potential bias introduced by pseudo-democracies would be towards a null result, as non-democratic sources of campaign incentives are likely to override or conflict with those generated by the electoral institutions themselves. When the Polyarchy threshold is increased to prune these questionably democratic observations from analysis, our results remain substantively similar. Our sample also omits countries that are EU members by removing them from the sample at their year of accession. We do so due to the confounding effects of intra-EU decision making and following the examples of recent work by the likes of Weinberg (2016) and Lechner & Wüthrich (2017). Furthermore, we omit a small number of country-year observations that are more than three standard deviations from the mean TFI score. These cases are addressed further in the appendix. The resulting sample is global in scope, a notable contrast to the existing literature, which typically focuses on developed countries or specific regions. In total, the dataset covers up to 97 countries over the period 1990-2012,[1] although data coverage for covariates reduces the number of countries analyzed to between 67 and 97.

The model we use to estimate the relationship between electoral institutions and trade policy takes the general form:

$$y_{it} = \beta_0 + \beta_1(x_{it} - \bar{x}_i) + \beta_2\bar{x}_i + \beta_3 z_i + (u_i + \epsilon_{it}).$$

The outcome, y_{it}, is one of three dependent variables measuring international trade policy, x_{it} represents time-varying, observation-level (or level 1) independent variable(s); $\bar{x}_i$ is the country

[1] Missing data for a number of Eastern European and African states for 1990-1991 generates an unbalanced panel.

mean for variable x; and z_i is time-invariant independent variable(s) at the clustered (or level 2) country-level. Following Bell and Jones (2015) and Bell, Johnston, and Jones (2014), β_1 represents the estimated within country effect(s) of the time-varying variable(s) and β_2 accounts for the between-country effect(s) of the time-varying variable(s). β_3 is the coefficient for the time-invariant, country-level variable(s). The independent variable of interest, electoral institutions, is included in the vector z_i. Although there are some instances where countries have enacted sweeping reforms of their electoral institutions, such cases are exceedingly rare. As such, the electoral-institution variable is considered slow-moving or virtually time-invariant and is accordingly treated as time-invariant, keeping with standard practice (Bell and Jones, 2015). Finally, u_i represents the model's random effects and ϵ_{it} is the level 1 residual error term.

This model is an example of the within-between random effects model (REWB) proposed by Bell and Jones (2015), similar to another random-effects (RE) model originally devised by Mundlak (1978). Although fixed effects (FE) are the de facto standard for dealing with panel data in economics and political science, we prefer this RE model for several reasons. FE's prominent position derives from the fact that FE models tackle the problem of heterogeneity bias by using higher-level unit (country) dummy variables to account for all higher-level (between country) variance. In doing so, they model out any sort of between-unit variance, eliminating their feasibility for a comparative analysis in our application: time-invariant processes are effectively controlled out, losing their effect on the outcome to the higher-level dummies. On the other hand, standard RE models can fail to accurately account for heterogeneity bias, producing severely biased results. The REWB is better able to account for such bias than standard RE models because it includes both within and between effects by partitioning what would otherwise be combined coefficients into separate effects for all time-varying variables. In this way, REWB controls for heterogeneity bias without totally throwing out time-invariant or slow-moving variables, such as electoral institutions.

Independent Variables

Our principle independent variable is an ordinal ranking of electoral systems based on intraparty competition and the degree to which they incentivize personal-vote cultivation among individual legislators who will seek reelection. This index is derived from Carey and Shugart's (1995, CS henceforth) typology of electoral institutions, Bormann and Golder's *Systems Around the World Index* (2013), and numerous individual country case studies and reports (see list in the appendix). In addition, the ranking is adjusted to account for discrepancies found by André, Depauw, and Martin (2016, ADM henceforth). Through thousands of interviews, ADM find that the incentives legislators actually encounter may differ in some cases from how they are

hypothesized to occur. Specifically, single-member plurality (SMP) and single-transferrable vote (STV) systems provide much stronger incentives to cultivate a personal vote than predicted by CS. As such, these two systems have higher scores in our index than in the original CS index.

The CS (1995) paper provides a ranked list of theoretically possible electoral systems based on the value imparted to legislators' personal reputations relative to party reputation by each system, along with real-world examples of those which exist in practice. Higher values in this index indicate greater incentives to cultivate a personal vote and pursue particularistic policies, such as trade protection. Based on Bormann and Golder (2013) and the other country- or region-specific sources, each country included in the sample is coded according to its electoral system and assigned a value based on the aggregate score assigned by Carey and Shugart (1995), reflecting performance on the four indicators described earlier (ballot, vote, pooling, and magnitude) and adjusted in some cases according to the findings of ADM:

Table 1 – Personal-Vote Index

Personal Vote Score	Electoral System Type	Example(s)
0	Closed-list PR (CLPR)	Israel, Spain
1	Open-List PR (OLPR) with Multiple Votes (MV)	Switzerland
2	Mixed-member Proportional (MMP)	New Zealand
3	Alternative Vote	Australia
4	OLPR with Single Vote	Chile, Poland
5	Block Vote	Fiji, Laos
6	OLPR SV with Open Endorsement	Brazil
7	Single-member plurality with Party Endorsement	Taiwan
8	Two-Round System	France
9	Single-member plurality without Party Endorsement	Philippines
10	Mixed-member majoritarian (MMM)	Japan, Taiwan
11	Single Transferable Vote (PR-STV)	Ireland
12	Personal-list PR/Single non-transferable vote (SNTV)	Colombia

We include a number of additional controls in keeping with the established literature (sources are listed in the appendix). GDP per capita (based on purchasing power parity) is used to capture levels of economic development, and is expected to be positively associated with trade openness. Country size, measured in terms of land mass, is included as well; this has been associated with trade dependence (Hatfield and Hauk, 2014), and it is plausible that there is a similar effect on trade barriers. Unemployment is included, as governments facing high levels of unemployment are likely to face more pressure for protectionist policies. Finally, we include a measure of the state of the global economy as measured by the IMF's World GDP figure. The state of the global economy can have an impact on trade flows and the policies meant to insulate national economies in times of crisis; World GDP treated as an individual non-specific, time-invariant control variable. Following research by Simmons, Dobbin, and Garrett (2008), we include

regional averages of the time-varying dependent variables lagged by one year to control for the potential effects of regional policy diffusion.

Along with these non-policy economic and geographic controls, a series of dummy variables is included to represent the origins of each country's legal system. The economic implications of legal origins are well-established across the political economy literature (see, for example, La Porta et al., 1997; Persson and Tabellini, 2003), including their effects on economic-policy outcomes. We also include an indicator term for EU membership, given its origins as a trade bloc and forum for economic cooperation. Finally, we include a measure of population density, which has been positively linked to trade engagement (Keesing and Sherk; 1971).

Dependent Variables

We use three alternative measures of protectionism. Two are used in Hatfield and Hauk (2014) and so have the added benefit of serving as points of comparison with some recent research. These two variables are trade-weighted average ad-valorem tariff (AT) from the World Bank's World Development Indicators Database and the Overall Trade Restrictiveness Index (OTRI) developed by Kee et al. (2009). The third measure of trade protection is the Trade Freedom Index (TFI) developed by the Heritage Foundation (2016) which has been scaled to account for non-normal distribution. Each has its own limitations, particularly with respect to data coverage; however, by testing our argument against three measures of protection, we aim to demonstrate a more robust relationship between institutional personal-vote incentives and trade policy.

The log-transformed average ad-valorem tariff (AT) benefits from its widespread application, ease of measurement, and the way in which it readily lends itself to cross-national comparisons. The use of AT measures has been criticized for the weighting mechanism and the lack of consideration of the impact of NTBs (HH, 2014). The impact of the WTO further dampens the utility of this measure, as tariff levels for members on many product lines are bound within those allowed under the WTO.

The second measure, OTRI, captures a broader range of protectionist measures than AT. OTRI takes the estimated effect of a country's total trade barriers and provides an equivalent ad-valorem tariff applied across all sectors, which would produce the same level of imports as the current system in place. Of course, this measure, too, has its drawbacks: it is based on estimated "import demand elasticities and non-tariff barrier ad-valorem equivalents" and thus "likely suffers from measurement error," and is only available, so far, for one year: 2009. (HH, 2014: 525)

The TFI is a similarly broad trade-policy measurement based on data collected from the World Bank, WTO, Economist Intelligence Unit, and individual government publications from each country included in the index. The resulting index captures the absence of both tariffs and

NTBs; while it is similar to OTRI in its conceptual formulation, the directionality is reversed, with a maximum score of 100 indicating full trade openness, and the minimum score of zero indicating pure autarky. Consequently, comparable results between AT and OTRI will retain the same sign, while the sign will flip for TFI: greater (lower) institutional personal-vote incentives will lead to higher (lower) AT and OTRI outcomes, and lower (higher) TFI scores.

Results

Regression results are displayed in Tables 2 and 3 with country-clustered robust standard errors in parentheses. For AT and TFI, the REWB model is estimated, with the means of x_{ij} variables included as explanatory variables, as recommended by Bell and Jones (2015). Ordinary least squares (OLS) is used to analyze the smaller, purely cross-sectional OTRI sample, following HH (2014). All coefficients for the estimated effect of personal-vote cultivation incentives modelled by the electoral systems variable are in statistically significant in the expected direction. Our full specification is also robust against multicollinearity (VIF results are presented in Table A1 in the appendix).

Models 1-3 estimate the link between the institutional personal-vote cultivation incentives and AT is positive, as expected. In the simple univariate model, the effect of a single rank increase along the personal-vote cultivation scale corresponds to a 0.046 increase in AT. In Models 2 and 3 the estimated effect is reduced by about half to 0.03 and 0.029 after inclusion of first geographic and economic control variables and then legal origin variables, respectively. The effect is statistically significant throughout. The control variables all exert the expected effects, except for geographic size, which has a negative impact on AT. It has been argued elsewhere that smaller countries will trade more out of necessity, which one might expect to lead to lower tariffs as trade policy and market access tend to be reciprocal. A possible explanation is that there is a closer connection in geographically smaller countries between legislators, lobbyists, and the electorate that could lead to more lawmakers being more responsive to protectionist pressures, *ceteris paribus,* or that geographic size is proxying for market size. However, for AT, the effect is statistically insignificant. This inverse relationship between geography and protection is generally consistent regardless of the dependent variable used.

Table 2 – REWB Models of Electoral Systems and Trade Protection

	Average Tariff			TFI		
	(1)	(2)	(3)	(4)	(5)	(6)
Electoral System	0.046**	0.030*	0.029*	-0.080**	-0.042*	-0.042*
	(0.016)	(0.012)	(0.012)	(0.024)	(0.017)	(0.018)
L.GDP pc Within		-1.009***	-1.025***		1.312***	1.276***
		(0.139)	(0.139)		(0.213)	(0.211)
L.GDP pc Between		-0.290***	-0.244***		0.297***	0.290***
		(0.041)	(0.049)		(0.060)	(0.070)
L.Land Area		-0.020	-0.029		0.015	0.006
		(0.032)	(0.029)		(0.049)	(0.053)
L.Pop.Den Within		-0.394	-0.373		1.231*	1.216*
		(0.315)	(0.313)		(0.591)	(0.587)
L.Pop.Den Between		0.018	0.015		-0.072	-0.110
		(0.038)	(0.042)		(0.061)	(0.072)
Unemployment Within		-0.017*	-0.017*		0.006	0.003
		(0.008)	(0.008)		(0.019)	(0.020)
Unemployment Between		-0.002	0.002		-0.001	0.002
		(0.007)	(0.006)		(0.008)	(0.008)
AVTariff Diffusion		0.006	-0.002			
		(0.008)	(0.007)			
UK Legal Origin			0.467**			-0.194
			(0.143)			(0.212)
FR Leg. Origin			0.411**			-0.020
			(0.125)			(0.285)
Socialist Leg. Origin			-0.098			0.055
			(0.134)			(0.260)
DL Leg. Origin			0.129			0.481
			(0.202)			(0.327)
L. World GDP			-0.004			-0.033**
			(0.005)			(0.011)
TFI Diffusion					0.241	0.186
					(0.133)	(0.135)
Electoral System	0.046**	0.030*	0.029*	-0.080**	-0.042*	-0.042*
	(0.016)	(0.012)	(0.012)	(0.024)	(0.017)	(0.018)
Countries	97	93	93	67	67	67
Adj. R^2	0.133	0.513	0.530	0.038	0.394	0.400
Num. obs.	993	971	971	638	638	638

***p < 0.01, **p < 0.05, *p < 0.1

The within and between effects (WE and BE, respectively) of GDP per capita and population density are in the expected directions, so that an increase in either corresponds with lower tariffs, and the effects of both are quite large as might be expected. Interestingly, the WE coefficients for both are larger than for BE. Both effects for GDP per capita are significant and its estimated impact on AT is quite large, as expected. The WE of unemployment has a significant negative effect on AT, though its estimated effect is considerably smaller than other state-level economic or geographic variables, which could reflect significant subnational variation in unemployment patterns and corresponding levels of sectoral protection. The adjusted R^2 is very high in the fully-specified AT model in column 3, especially compared to similar studies which

utilize the binary PR/plurality variable. For example, in HH (2014) the (standard) R^2 for their AT regressions with a binary electoral-system variable is less than a quarter of the reported (adjusted) R^2 here, which implies a better fit for the personal-vote index approach to electoral systems.

The results from TFI in Models 4-6 are similar to that of the AT results. Electoral systems incentivizing personal-vote cultivation are inversely linked to lower TFI scores (greater protectionism). The effect of including controls is to halve the substantive effect of personal-vote incentives, similar to the previous battery of models. Model fit, according to adjusted R^2, is slightly weaker than in the AT regressions, but remains very good.

The geographic and economic control variables behave in a similar manner to the previous models, with the exception of unemployment, which loses significance. This could be due to the complexity of NTBs relative to tariffs, which makes them a less useful policy tool for a legislator seeking to win over their constituency and cultivate a personal vote by addressing a particular problem (a similar logic to that presented by Kono, 2006). The legal origin indicators are also not significant in the TFI REWB models, although EU membership gains significance, most likely reflecting the impact of membership in the customs union. Our measure of the global economy is significant and negatively associated with TFI, reflecting increasing protectionism as the global economy grows; most likely, this is reflecting policies enacted as governments sought to re-establish economic growth following the Great Recession.

Table 3 presents OLS regressions estimating the relationship between the personal-vote cultivation effect of electoral systems and OTRI. OTRI is similar to the TFI, although it approaches NTBs by estimating a comparable economy-wide average ad-valorem tariff, rather than treating NTBs in a qualitative, and less transparent manner. The results of the OTRI models presented in Table 3 are consistent with those presented in Table 2 for AT and TFI. The coefficient for institutional personal-vote incentives is positive and significant in both Models 7 and 8; the penalty imposed by the battery of controls is much smaller than for the previous dependent variables, with the coefficient reduced from 0.053 to 0.052. Curiously, per-capita GDP is not significant in Model 8, despite being highly significant in the REWB regressions, although the coefficient retains the expected sign. The same is true for the coefficients for land area and population density. Unemployment is statistically significant and its effects remain in the same direction as the AT and TFI models.

Table 3 – OLS Regression, Electoral Systems and OTRI

	Log OTRI	
	(7)	(8)
Electoral System	0.053**	0.052*
	(0.016)	(0.022)
L.GDP pc		-0.077
		(0.078)
L.Land Area		0.081
		(0.052)
L.Pop.Den		0.139
		(0.075)
Unemployment		-0.035**
		(0.012)
UK Legal Origin		-0.523
		(0.430)
FR Leg. Origin		-0.190
		(0.408)
Socialist Leg. Origin		-0.511
		(0.441)
DL Leg. Origin		-0.840
		(0.545)
Electoral System	0.053**	0.052*
	(0.016)	(0.022)
L.GDP pc		-0.077
		(0.078)
N	92	66
Adjusted R^2	0.099	0.321
Residual Std. Error	0.601 (df = 90)	0.593 (df = 64)

Notes: *** p < 0.001, ** p < 0.01, * p < 0.05 Standard Error in parentheses

Across all specifications, our results remain consistent: increases in institutionalized personal-vote incentives are associated with higher levels of trade protection. One final point worth mentioning is that, according to R^2, our electoral index alone explains nearly 15% of the variation in tariff levels (see Model 1), and up to nearly 10% of the variation in combined trade protection (see Model 7).

Robustness Checks and Discussion

The statistical results reported in Tables 2 and 3 provide evidence supporting our argument that electoral systems providing greater incentives to legislators to cultivate a personal vote lead to more protectionist trade policies. Our electoral-institution index appears to serve as a more than capable replacement for the ubiquitous PR-plurality indicator. We conduct a number of further tests to ascertain the robustness of our approach.

Our sample is deliberately wide, admittedly allowing for a loose and institutional definition of democracy, with number of observations in which the political regime could be defined as hybrid or democratizing. The incentives created in hybrid or newly democratic systems, where the legislators are not necessarily accountable in the conventional sense to their constituencies, may be misrepresented by the ordinal institutional variable, which relies on democratic institutions as well as internalized democratic norms. To examine the effect among more consolidated democracies, we increase the Polyarchy threshold by 0.1 and 0.2 (to 0.5 and 0.6, respectively), which leads to improved coefficients and statistical significance for the electoral systems variable run against both AT and TFI as well as improvements model fit, as presented in Table 4. The strong performance of our institutional index in Models 9-12 indicates that the inclusion of less consolidated democracies in our original sample biases against a result, as politicians in these electoral environments are less responsive to institutional incentives, either due to the presence of strong non-institutional incentives, or a lack of familiarity with the structure of their institutionalized incentives.

Table 4 – REWB Regressions with Higher Polyarchy Thresholds

	Model 9	Model 10	Model 11	Model 12
DV, Polyarchy Threshold	AT, 0.5	AT, 0.6	TFI, 0.5	TFI, 0.6
Electoral System	0.035*	0.040**	-0.055*	-0.066**
	(0.013)	(0.014)	(0.022)	(0.024)
L.GDP pc Within	-0.941***	-0.964***	1.362***	1.351***
	(0.143)	(0.153)	(0.274)	(0.285)
L.GDP pc Between	-0.275***	-0.303***	0.346***	0.525***
	(0.051)	(0.065)	(0.085)	(0.101)
L.Land Area	-0.038	-0.023	0.004	0.005
	(0.029)	(0.028)	(0.060)	(0.065)
L.Pop.Den Within	-0.540	-0.478	1.021	0.850
	(0.332)	(0.386)	(0.719)	(0.783)
L.Pop.Den Between	-0.001	0.006	-0.115	-0.181
	(0.039)	(0.047)	(0.083)	(0.092)
Unemployment Within	-0.013	-0.018*	0.003	-0.015
	(0.008)	(0.008)	(0.021)	(0.021)
Unemployment Between	0.005	0.007	-0.003	-0.017*
	(0.006)	(0.009)	(0.008)	(0.008)
AVTariff Diffusion	0.413**	0.307*		
	(0.143)	(0.140)		
UK Legal Origin	0.373**	0.303	-0.085	0.157
	(0.132)	(0.161)	(0.225)	(0.231)
FR Leg. Origin	-0.163	-0.222	0.122	0.390
	(0.135)	(0.158)	(0.344)	(0.444)
Socialist Leg. Origin	0.150	0.124	0.147	0.743*
	(0.190)	(0.196)	(0.287)	(0.319)
DL Leg. Origin	-0.001	-0.006	0.570	0.904*
	(0.006)	(0.007)	(0.373)	(0.416)
L. WOrld GDP	-0.003	0.001	-0.031*	-0.042***
	(0.008)	(0.010)	(0.012)	(0.012)
TFI Diffusion			0.111	-0.015
			(0.151)	(0.139)
R^2	0.527	0.507	0.411	0.426
Adj. R^2	0.519	0.496	0.396	0.408
Num. obs.	842	658	562	458

$^{***}p < 0.001$, $^{**}p < 0.01$, $^{*}p < 0.05$

Recent research on institutions and trade policy has additionally sought to address concerns of the potential endogeneity of electoral systems first described in Rogowski (1987). PT (2003), Evans (2009), and HH (2014) all address this through the application of two-stage least squares (2SLS) regressions, allowing them to control for correlation between the error term and endogenous regressors by running a first-stage OLS regression on the electoral-institution index and instrumental variables with which there may be a causal relationship, and then substituting the first-stage fitted values in for the electoral-institution index in the second-stage regression. We run 2SLS regressions with AT and TFI, including instrumental variables for legal and colonial origins, geographic area, and the time of ratification of the current constitution, presenting the results in

Table 5. The results for our electoral-system index remain consistent with those of our previous models, albeit with larger substantive effects.

Table 5 – 2SLS Results

	Model 13	Model 14
	AT	TFI
Electoral System	0.065***	-0.056**
	(0.012)	(0.020)
L.GDP pc Within	-0.875***	1.439***
	(0.070)	(0.135)
L.GDP pc Between	-0.161***	0.229***
	(0.021)	(0.037)
L.Land Area	-0.067***	0.049*
	(0.013)	(0.022)
L.Pop.Den Within	-0.751***	0.834*
	(0.211)	(0.413)
L.Pop.Den Between	-0.054**	-0.040
	(0.017)	(0.028)
Unemployment Within	-0.013	-0.004
	(0.008)	(0.015)
Unemployment Between	0.004	-0.005
	(0.003)	(0.005)
L. World GDP	0.341***	-0.042
	(0.090)	(0.168)
UK Legal Origin	0.515***	-0.104
	(0.093)	(0.174)
FR Leg. Origin	0.038	0.023
	(0.093)	(0.176)
Socialist Leg. Origin	0.105	0.422*
	(0.113)	(0.208)
DL Leg. Origin	-0.001	-0.030
	(0.009)	(0.016)
AvTariff Diffusion	0.041***	
	(0.006)	
TFI Diffusion		0.372***
		(0.069)
R^2	0.529	0.503
Adj. R^2	0.522	0.492
Num. obs.	971	638

***p < 0.001, **p < 0.01, *p < 0.05

We also revisit our AT models, using multiple imputation to ensure that missingness and listwise deletion are not driving our results (Honaker and King 2010). As above, the process and results are discussed in greater detail in the appendix (Table A3). The results of this process serve to strengthen our confidence in those presented here: institutional incentives to cultivate a personal vote are positively linked to trade protection

Finally, we test the performance of the conventional binary PR indicator on our large sample. We follow Evans (2009) by removing mixed systems, and conduct REWB regressions for

both AT and TFI. As expected, the PR indicator does not gain significance in either test (see Table A4).

Overall, our electoral-institution index performs well across a series of tests involving multiple measures of trade protection and over a large and varied dataset. It has the benefit of being well-grounded in research on comparative political institutions, and provides a more nuanced measure of the interests and opportunities that drive politicians in their electoral environment than the common binary PR indicator.

Conclusions

Electoral institutions affect trade-policy outcomes, this much is clear. What has not always been so clear is exactly how they affect trade policy. The literature on the subject is full of contradictory arguments and results, often revolving around a binary institutional indicator to model variation among electoral systems. We rely on an established line of institutional research in comparative politics, capturing politicians' incentives under electoral institutions. Our resulting index allows us to order a wide range of institutional configurations based on their impact on incentivizing politicians to pursue a personal vote. The benefits of trade liberalization have strong public-good characteristics, while protectionism is a narrowly-targeted private good; this distinction creates a vivid opportunity to differentiate between politicians seeking personal political support through particularistic policies and those responding to their parties' more broad-based incentives. We find substantial support for our argument: increasing institutional personal-vote incentives lead to increases in trade protection. This evidence suggests the need for a rethinking of the micro-level effects of domestic institutions on foreign-economic policy outcomes.

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