

Electoral Regime and Trade Policy

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Abstract

This paper studies how trade protection varies with the electoral rules for legislative representation. In particular, we study how trade policy differs between countries with legislatures elected by a plurality election rule in single member constituencies and legislatures elected by a proportional, or party-list, rule. Our results, which are in line with the existing literature, show that countries with list-PR systems tend to have lower trade barriers than countries with majoritarian systems. Our paper expands on this literature by looking at the mechanisms through which this correlation can be explained. Our findings indicate that, contrary to existing theory, neither constituency size nor party strength are important when explaining this correlation. Country size does matter, but does not explain the whole of the correlation.

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1 Introduction

Economists have long advocated free trade as the best economic policy. For almost as long, they have wondered why politicians do not seem to listen. The general consensus is that political forces operate to thwart countries that wish to liberalize their trade policies. However, these political forces can only act through a political mechanism, and thus policy outcomes could depend on that mechanism. This paper focuses on how trade policy differs for countries that use proportional representation system (PR) for elections versus those that use a majoritarian system, and on understanding the reasons for those differences.¹ Grossman and Helpman (2005) provide a theoretical model describing why countries with a PR system will have lower trade barriers, and Evans (2009) provides empirical evidence indicating that they do, in fact, have lower trade barriers. We also find evidence that countries with a PR system have lower trade barriers.

However, we take this literature a step further and examine the channels through which this correlation might operate. Of particular note in the literature addressing this topic, Grossman and Helpman (2005) argue that countries with PR systems should have lower trade barriers as they have fewer electoral districts and potentially stronger national parties; we find, however, that neither of these factors explains trade policy after controlling for the method of electoral representation. In addition to these factors, we also consider that PR countries are, on average, smaller than majoritarian ones, and thus tend to rely more on international trade, which may induce them to choose lower trade barriers. While we do find that smaller countries have lower trade barriers, and smaller countries are more likely to have a PR system, this factor

¹“Majoritarian” here refers to the electoral rule where the candidate with the most votes obtains the seat for a particular geographic region, and hence more properly is called a plurality rule. However, the term majoritarian is standard in the literature; see for instance Persson and Tabellini (2000, 2003).

does not wholly explain the differences between PR and majoritarian countries' trade policies.

We are not the first to consider the question of how differences in electoral rules affect economic policy. There is a growing political economy literature about the differences between countries that elect their legislators via majoritarian elections in geographic constituencies, and those that choose them via proportional representation elections with party lists. For example, Milesi-Ferretti et al. (2002) note that in countries with PR systems, government spending is composed primarily of transfers between different social groups, whereas in majoritarian systems, a larger percentage is composed of public goods. The mechanism behind this result is that in PR systems, the constituencies of legislators are not geographic areas, but rather important social groups. On the other hand, under majoritarian regimes the legislators have a greater electoral incentive to target public good spending towards their own geographic constituencies—thus effectively excluding voters from other constituencies from its geographically concentrated benefit. However, Lizzeri and Persico (2000) develop a theoretical model in which some public goods are more likely to be provided under a proportional regime. Persson and Tabellini (1999) also speak to this question, developing a theoretical model describing how transfers, public goods provision, and rents to politicians will vary with electoral regime. Persson and Tabellini (2003) then perform a number of empirical tests of the proposition that government type will affect the amount and distribution of government spending. Their results indicated that countries with PR systems will spend both more money in total (and collect more in tax revenue) and spend more money on social welfare programs and other types of transfer spending. However, they also point out many of the empirical difficulties in comparing political institutions – notably in classifying transfer spend-

ing vs. public goods spending. We hope to alleviate some of these difficulties in our current endeavor, as one can easily obtain data on tariff rates and other trade barriers. In contrast, determining how a government's budget is divided between rents to politicians, public goods, and social transfers can be a difficult empirical task in and of itself.

The public finance and political economy literature, both theoretical and empirical, has not extended very far into the realm of international trade. Rogowski (1987) attempts to provide a comparative study of trade policy between proportional, majoritarian, presidential, and parliamentary governments. Central to his argument is the prediction that PR systems are likely to have smaller tariffs than majoritarian systems due to a lack of geographically particularistic interests that would lobby for trade protection. Since free trade is widely held by economists to generally maximize overall social welfare in a country, it is theorized a proportional electoral rule will lead to a government that is less concerned about specific regions and thus will want to pursue free trade. Grossman and Helpman (2005) make a similar argument predicting that tariffs will be higher under a majoritarian regime, arguing that the proportional system will consider all regional interests equally, and hence end up choosing the welfare-maximizing policy of free trade. Willman (2005) also makes a comparable argument in a political model of how tariff policy is determined. None of these directly tested their theory, but Rogowski did point out that there is a correlation between proportional systems and a high trade to GDP ratio. Evans (2009) provides a more thorough empirical test of the Grossman and Helpman theory, demonstrating that majoritarian countries have higher tariffs on average than PR systems, even when controlling for potentially confounding factors like colonial and legal origins.

McGillivray (2004) provides an alternative explanation as to why countries with

PR systems might have lower trade barriers. The use of party-list systems in PR countries strengthens the position of national party leaders, who can then punish legislators who deviate from the party policy by moving those legislators to the bottom of the electoral list. These party leaders are likely to be more concerned with the party's national reputation than with mere regional interests. Therefore, a national welfare-maximizing policy like free trade is more likely to prevail in a state with a party-list PR system.² Hankla (2006) makes a similar argument, testing the effect of party strength on trade policy more directly by creating an index of party strength applicable to both majoritarian and PR systems. He found that countries with stronger parties tend to have lower levels of trade protection. To the extent that PR systems strengthen parties, this result could explain the correlation between PR systems and lower trade barriers.

Neither of these two lines of literature offers a third possibility explaining the presence of lower tariffs in a country with a PR system. It is possible that the system of government does not directly influence the tariff level, but that both the tariff level and the governmental system are correlated with a third causal factor. In this paper, we hypothesize that one potential correlate of both trade protection and governmental system is country size. A small and homogenous country might be more suited to a list-PR system, while at the same time being more dependent on imports and less likely to erect high trade barriers. As a result, we could see a spurious, non-causal correlation between PR systems and lower trade barriers.

Therefore, there are at least three reasons to believe that countries with list-PR systems will have lower trade barriers than countries with majoritarian systems. This paper contributes to the existing literature on this topic by testing the alternative

²A similar mechanism is present in Grossman and Helpman's (2005) paper on the differences in trade protection as a function of electoral regime.

hypotheses listed above. Our empirical study is able to distinguish between the large-constituency explanation, the party-strength explanation, and the country size explanation. We also check the robustness of our results by using several dependent variables. The first (the primary dependent variable used in the Evans study) is the import-weighted average of applied tariffs across sectors within a country. The second is the countries total volume of trade relative to GDP. The third is total amount of trade-related taxes collected to trade volume. The last is the Overall Trade Restriction Index (OTRI), which comes from recent work by Kee, Nicita and Olearraga (2008, 2009).

Our results indicate that constituencies and party strength play little to no discernable role in explaining the correlation between PR systems and lower trade barriers. Country size does seem to explain some of the variation in trade policy across electoral regimes, but it does not explain the whole of the correlation. These results indicate that models positing constituency size or party strength as a means connecting electoral regime to trade barriers may have to be revisited.

2 Model

2.1 Economic Framework

In this section, we lay out a reduced-form model that captures the essential elements of Grossman and Helpman (2005).

The economic model is the same as that of the well-known model of Grossman and Helpman (1994). There is a continuum of agents of mass 1, and there are $N + 1$

industries. The utility of an agent is given by

$$x_0 + \sum_{n=1}^N u_n(x_n)$$

where x_0 is the consumption of a numeraire good 0 and x_n is the consumption of good n . We assume that each $u_n(\cdot)$ is smooth, strictly increasing, and strictly concave. We set the price of the numeraire good (which, by assumption, receives neither tariffs nor subsidies) to 1; domestic prices for the other goods (inclusive of tariffs or subsidies) are given by \vec{p} ; and the exogenous world prices for those goods are given by \vec{p}^* .

For a given level of income I and prices \vec{p} we can write the indirect utility of the agent as

$$I + s(\vec{p})$$

where

$$s(\vec{p}) = \sum_{n=1}^N u_n(d_n(p_n)) - p_n d_n(p_n)$$

where $d_n(p_n)$ is the demand for good n given a domestic price p_n .³

The numeraire good is produced from labor alone with each unit of labor producing one unit of the numeraire good. Other goods are produced using a constant returns to scale technology that requires both labor and a factor specific to the production of that good. Each agent that is part of industry n owns an equal share of this input, and the total profits generated from this ownership are denoted $\pi_n(p_n)$. We further assume the proportion of agents in industry n to the total population is given by α_n ; hence individual profits are given by $\frac{\pi_n(p_n)}{\alpha_n}$. The income of an agent in industry n is

³We assume that total income is high enough so that every agent purchases a positive amount of the numeraire good. Hence, $d_n(p_n) = (u')^{-1}(p_n)$.

therefore given by

$$I_n = \ell_n + \frac{\pi_n(p_n)}{\alpha_n} + r(\vec{p})$$

where $\ell_n = 1$ is the labor supply of that agent. $r(\vec{p})$ is the per-capita revenue generated by tariff collection, which we assume is distributed as a lump-sum to all agents. It is given by

$$r(\vec{p}) = \sum_{n=1}^N (p_n - p_n^*) (d_n(p_n) - y_n(p_n))$$

where $y_n(p_n)$ is the domestic production of good n . Combining all of the above, we can write the utility of an agent in industry n solely as a function of prices:

$$W_n(\vec{p}) = \ell_n + \frac{\pi_n(p_n)}{\alpha_n} + s(\vec{p}) + r(\vec{p})$$

2.2 Political Framework

The country's legislature is composed of representatives elected from several electoral districts. We assume that there are D districts, and within each district d the set of industries is \mathbb{N}_d . Hence, we can write the utility of the district d as

$$W_d(\vec{p}) \equiv \sum_{n \in \mathbb{N}_d} \alpha_n W_n(\vec{p})$$

and the total national welfare as

$$W(\vec{p}) \equiv \sum_{n=1}^N \alpha_n W_n(\vec{p})$$

We assume that the country's governing coalition controls a set $\mathbb{G} \subseteq \{1, 2, \dots, D\}$ of the districts.

After the election, the representatives of the districts of the governing coalition and the governing coalition's national leaders decide on trade policy, effectively setting \vec{p} . The coalition's national leadership is concerned with maintaining their popularity across the entire country. Therefore, their goal is to maximize total welfare $W(\vec{p})$. A legislator from district d is more concerned with maintaining popularity among voters in his home district, and so wishes to maximize $W_d(\vec{p})$, the (average) utility of voters in his district.

In deciding trade policy, we assume that the national leaders of the coalition in power and the current representatives of that coalition bargain over policy. Hence, we model the policy choice as the outcome of a Nash bargaining solution with appropriate weights. The weight given to the national leaders is θ and the weight given to the individual legislators is $1 - \theta$. Hence, the Nash bargaining solution is given by

$$\max_{\vec{p}} \theta \sum_{d=1}^D W_d(\vec{p}) + (1 - \theta) \sum_{d \in \mathbb{G}} W_d(\vec{p})$$

This problem is similar to that derived in Grossman and Helpman (1994). However, the weights given to various industries are determined differently in the two models. In their model, industries that were able to successfully lobby received additional consideration from an essentially unitary government. In our case, industries that are in districts controlled by the governing party receive special consideration, as representatives of those districts wish to increase their chances of reelection, at the cost of overall welfare.

Solving the maximization problem, we obtain that

$$t_k = \frac{(1 - \theta) (\mathbf{1}_{\{k \in \mathbb{N}_g : g \in \mathbb{G}\}} - \bar{\alpha})}{(\theta + (1 - \theta) \bar{\alpha})} \left(\frac{-y_k(p_k)}{p_k^* m'(p_k)} \right) \quad (1)$$

where $t_k = \frac{p_k - p_k^*}{p_k^*}$ is the ad valorem tariff on good k , and where $\bar{\alpha} = \sum_{n \in \{k \in \mathbb{N}_g : g \in \mathbb{G}\}} \alpha_n$ is the total weight of the agents in districts that are members of the governing coalition.

2.3 Implications

Using the expression for tariffs in equation (1), we can immediately derive the following:

Proposition 1 *If either party power is absolute, i.e. $\theta = 1$, or there is one electoral district, free trade is the unique equilibrium policy.*

In the former case, since the goal of the party is to maximize total welfare, we recover the standard result that welfare maximization implies free trade. In the latter case $\bar{\alpha} = 1$ and $\mathbf{1}_{\{k \in \mathbb{N}_g : g \in \mathbb{G}\}} = 1$ for all industries. Intuitively, since there is only one district, the incentives of the governing party and the representative of the sole district are the same: to maximize welfare within the nation, again leading to the equilibrium policy of free trade.

Proposition 2 *As the bargaining power θ of the party increases, equilibrium tariffs and export subsidies decrease.*

This result also follows directly from the fact that the governing party wishes to maximize welfare. As the aims of the governing party receive more weight, we move closer to the welfare-maximizing policy of free trade.

Proposition 3 *Assuming a constant elasticity of import demand, industries with a higher equilibrium ratio of domestic output to imports will receive more trade protection.*

We can rewrite the expression for the ad valorem tariff (1) as

$$\frac{t_k}{1 + t_k} = \frac{(1 - \theta) (\mathbf{1}_{\{k \in \mathbb{N}_g : g \in \mathbb{G}\}} - \bar{\alpha})}{(\theta + (1 - \theta) \bar{\alpha})} \left(\frac{z_k(p_k)}{e_k(p_k)} \right)$$

where $z_k(p_k) = \frac{y_k(p_k)}{m_k(p_k)}$ is the equilibrium ratio of domestic production to imports and $e_k(p_k)$ is the elasticity of import demand in industry k . While this proposition more directly tells us about the nature of protection within a country, it also implies that smaller countries (that are generally more dependent on imports) are also likely to have lower tariffs, as $z_k(p_k)$ is likely to be smaller in smaller countries for many imported goods.

While this equilibrium tariff policy looks in many ways similar to those derived by Grossman and Helpman (2005), it contains one notable difference. Grossman and Helpman (2005) contrasted a country with one legislative constituency to one that had three legislative constituencies. They considered the country with one legislative constituency as a country with a PR electoral system and the country with three as a majoritarian system. They then noted, as we do, that a country with one legislative constituency will pursue free trade, while a country with three legislative constituencies will generally not unless the national leaders of the governing coalition are very strong. Grossman and Helpman labeled this difference as a “majoritarian bias” in tariff policy formation.

In contrast to Grossman and Helpman, our model incorporates an arbitrarily large number of legislative districts D into our political framework. However, our final tariff equilibrium makes no unconditional predictions about what the effect of changes in D would be on the tariff levels if D is larger than three. That is, we can unequivocally say that the average level of trade protection in the country would, in non-degenerate cases, increase if the number of legislative constituencies in the

country increased from one to three. However, we cannot say that increasing the number of constituencies from three to 3000 would have the same effect without making restrictive and arbitrary assumptions on the distribution of industries across constituencies, the strength of political coalitions, and other relevant factors. In terms of equation (1), it is unclear that changes in D would have a necessary impact on $\bar{\alpha}$ once D is greater than one. This consideration is relevant to how we interpret the differences between countries with majoritarian and PR electoral systems. As we note below, not all – indeed, only a relative handful of – countries with PR electoral systems have only one electoral constituency. While it is true that they generally have fewer electoral constituencies than countries with majoritarian systems, the comparative statics of what we refer to as the constituency-size hypothesis become muddled when we are dealing with countries with more than one electoral constituency, whether they are PR or majoritarian.

3 Outline of the Empirical Hypotheses

In the Grossman and Helpman (2005) model, the authors explicitly outline two mechanisms that will cause a country to have lower trade barriers, and these channels are reflected in our Propositions 1 and 2. The first is that, in a PR system of the type represented in the model, there is effectively only one legislative constituency comprising the whole of the country. Under such a system, legislators who wish to maximize the welfare of their constituents will choose the policy that maximizes national welfare, which under most circumstances will be a policy of free trade. The other mechanism comes through the strength of national party leaders. They are assumed in the model to want their parties' legislators to pursue policies that will promote national welfare, and thus are more likely to support free trade than individual legislators. To the

extent that they are able to impose their preferences on individual legislators, the country will be more likely to support free trade.

We refer to the first mechanism as the constituency-size hypothesis. In the real world, very few countries use a PR electoral system with only one legislative constituency.⁴ As noted above, a strict interpretation of the Grossman and Helpman model does not lend itself to any straightforward predictions about what will happen to the average tariff when the number of legislative constituencies in a country is increased beyond three. However, it is the case that countries that use PR systems are likely to have fewer legislative constituencies than countries with majoritarian systems. Indeed, holding the number of seats in the legislature constant, a PR system must necessarily have fewer legislative constituencies, as each constituency must elect multiple representatives in order to represent parties proportionately.

The first row of Table 1 confirms this intuition. Of the countries in our sample, the average majoritarian country has almost 200% more legislative constituencies than the average PR country. Therefore, the average constituency in a country with a PR system consists of a much larger fraction of the country's population than the average constituency in a country with a majoritarian system. To the extent that trade protectionism is driven by special interests located within a legislative constituency, larger constituencies may dilute the impact of any one interest and will thereby dampen the demand for protectionism. This hypothesis, however, is not a direct implication of the Grossman and Helpman model. Therefore, we will test below the "strong" version of the constituency size hypothesis, which comes to us

⁴According to the Interparliamentary Union, as of 2009, only 11 countries use a PR system with only one nationwide constituency: Israel, Kazakhstan, Kyrgyzstan, Moldova, Monaco, Russia, Rwanda, Serbia, Slovakia, Timor-Leste, and the Ukraine. Of these countries, only Israel, Russia, Slovakia and the Ukraine have sufficient Polity IV scores and data availability to appear in our dataset.

from the Grossman and Helpman model and states that a country with one legislative constituency should have significantly lower tariffs than countries with more than one legislative constituency. We will also test a weaker version of this hypothesis, which does not come from the model and claims that the average tariff in a country should be increasing in the number of legislative constituencies in that country.

We refer to the second mechanism as the party-strength hypothesis. In a PR system, national party leaders play a large role in determining the electability of aspiring legislators in their party through the creation of party lists. Party members who are cooperative with the party leadership are likely to find their names near the top of an electoral list, while those who are uncooperative are likely to end up near the bottom or left off the list entirely. This system thereby allows party leaders to exercise a great deal of control over legislators from their party. While precise mechanisms vary considerably across countries, party leaders in a majoritarian system may find themselves constrained in the amount of discipline that they can exert over legislators. They may find it necessary to pick candidates who have a strong attachment to the constituencies that they represent, or they may not be able to pick candidates at all, leaving such decisions to local party primary elections.

Hankla (2006) creates an index of party strength across countries in both majoritarian and PR countries by looking at the amount of control that party leaders have over electoral nominations. He gives all countries in his sample a ranking of 0, 1, or 2, where a decrease in the index represents a greater amount of control by national party leaders over the nominations process. He also shows that this index is positively correlated with trade protection, where a lower index value leads to lower trade protection. The second row of Table 1 shows that our intuition about party leaders being stronger in PR systems is actually contradicted by this dataset. The

average value on this index for PR systems is 0.645, whereas the average value for majoritarian systems is 0.322. Therefore, to the extent that party strength matters for trade protection, it will actually work against what we referred to as the party-strength hypothesis, as party leaders in majoritarian systems seem to have greater control in practice over the nominating process than party leaders in proportional systems. However, differences in party strength may still matter when holding the type of electoral system constant.

We refer to the third mechanism as the country-size hypothesis. This hypothesis does not claim a causal effect between PR systems and lower levels of trade protection, but rather a spurious correlation that exists because both levels of protection and a country's type of government may be jointly determined by country size. As noted by Frankel and Romer (1999) smaller countries are more likely to be heavily dependent on trade. When this insight is combined with the Grossman and Helpman model, we would expect that smaller countries are more likely to have lower equilibrium levels of trade protection. At the same time, a PR system of government might be more suited to a relatively small and homogenous country.

The third and fourth rows of Table 1 show that there is in fact a difference in country size between PR and majoritarian countries. Majoritarian countries are on average about 33% larger in terms of land area than PR countries and about 47% larger in terms of population. Therefore, to the extent that there is a causal mechanism between country size and trade protection, we would expect PR countries to have lower levels of trade protection for this reason.

It is worth noting that these three hypotheses are not mutually exclusive. Indeed, all three mechanisms are present, either explicitly or implicitly, in the Grossman and Helpman (2005) model. Therefore, either all three or just some subset of the three

may be driving the empirical result that shows that PR systems have lower levels of trade protection than majoritarian systems.

4 Data Description

The mechanisms described above all assume that the country has meaningful elections. Therefore we restrict our sample to democratic countries. More concretely, we examine countries that receive a score of 5 or higher in the Polity IV dataset between 1976 and 2004.⁵

4.1 Dependent Variables

We use four different dependent variables in our analysis: the trade-weighted average ad-valorem tariff, the total trade taxes to trade ratio, the trade to GDP ratio and the Overall Trade Restriction Index. Summary statistics for all four variables are provided in Table 2.

The trade-weighted average ad-valorem tariff comes from the World Bank's World Trade Indicators CD-ROM (2008). The advantages of this data series are two-fold. First, it is widely-used as a measure of trade protection in the empirical literature on international trade, and, in particular, it was used in the Evans (2009) study cited above. Therefore, it is useful as a comparison check against previous results. Secondly, it is relatively easy to measure and available for a wide variety of countries. However, it also has two major drawbacks. The first is due to the import value weights used in the calculation of the weighted averages being themselves affected by tariffs. Higher tariffs in a particular sector will, all else equal, reduce the quantity of

⁵The years are determined by the extent of the Hankla (2006) dataset mentioned above.

imports in that sector, and therefore the total value of the good imported. Perversely then, a country could reduce its import-weighted average tariff by *increasing* tariffs in highly-protected sectors until the value of imports in that sector fell to zero. The second drawback comes from the fact a large amount of trade protection (especially in industrialised countries) consists of non-tariff barriers to trade, thereby leading us to systematically understate levels of trade protection in a way that may not necessarily be random.

The trade taxes to trade ratio has also appeared as a dependent variable in some recent studies of trade protection (see, for example, Hankla (2006)). This measure includes not only duties collected via tariffs, but also via other import charges or export duties. Because all of these taxes can potentially distort trade, they can reasonably be included in a measure of trade protection. We calculated this data series using three other data series available from the World Bank's World Development Indicators database: trade taxes as a percentage of total taxes, taxes as a percentage of GDP, and trade volume as a percentage of GDP. The main advantage of this variable over the average tariff is that it takes into account the effect of trade-distorting taxes besides tariffs. It has two disadvantages. The first is that, just as with the trade-weighted average tariff, the amount collected in trade taxes from any one source may be decreasing in the tax rate if the effect of those taxes on trade volume is large enough. The second is that this data series is calculated from other data series. To the extent that the component data series are measured with error, the composite variable could potentially be measured with a larger degree of error.⁶

The trade-to-GDP ratio, like the trade taxes to trade ratio, attempts to include

⁶Indeed, for some country-years in our sample, the trade taxes ratio is actually negative due to the amount of taxes being collected by those countries being negative – presumably due to tax subsidies being greater than tax collections.

multiple forms of trade protection into one summary measure. This variable has also appeared in some recent studies of trade protection as a dependent variable (see, for example, Hankla (2006)). All different types of trade protection should affect trade volume roughly in proportion to the importance of the protection measures. Therefore, the changing volume of trade in a country should reflect the stringency of the country's trade protection policies. This data series is also readily available from the World Development Indicators database. The drawback of using this measure as a dependent variable is that it is also heavily dependent on many factors besides a country's trade policy. In particular, a country that is small (both in terms of population or geographic area) or is located near large countries is likely to have a high trade-to-GDP ratio regardless of its level of trade protection. These other variables may be correlated with some of the regressors that we include in our regressions.

Recent work by Kee, Nicita and Olarreaga (2008, 2009, henceforth KNO)⁷ attempted to address some of the deficiencies noted in the variables above. Building on theoretical work done by Anderson and Neary (2005) they developed a measure called the Overall Trade Restriction Index (OTRI). The OTRI answers the following question: if a country's current structure of trade protection were to be replaced by an ad-valorem tariff that was uniform across all sectors, what would the new ad-valorem tariff have to be in order for the country's total level of imports to be the same as under the current system? The OTRI measures are potentially a big improvement on existing measures of trade protection in that they are able to make an apples-to-apples comparison between tariff and non-tariff barriers to trade in terms of their impact on imports. Because both are important in describing the pattern of trade protection across countries, a measure that combines the impact of the two

⁷While these papers describe how the TTRI and OTRI (discussed below) are calculated, we use the data as reported in the World Trade Indicators CD-ROM (2008).

is certainly an advance. The OTRI also has an advantage over a simple weighted average of tariffs in that it takes into account the effects that tariffs have on the value of imports via the estimate of import demand elasticities. This substantially (though not completely) addresses the problem mentioned above of the weights used in calculating trade-weighted average tariffs. However, there are some significant drawbacks as well. Both the import demand elasticities and non-tariff barrier ad-valorem equivalents used in the calculation of the OTRI are estimated rather than observed parameters. Thus, OTRI suffers from what is likely to be a non-trivial amount of measurement error. Also, KNO were only able to estimate the ad-valorem equivalents of non-tariff barriers for a limited number of countries and only for one year in each of those countries. Hence the sample size for regressions that use OTRI as a dependent variable will be significantly smaller than for other dependent variables.

4.2 Independent Variables

Our major source of data for our independent variables is the World Bank's Database of Political Institutions (Beck et. al., 2001, updated 2006, henceforth DPI). From this dataset we are able to classify countries according to their type of electoral system, separating legislatures with majoritarian elections from those with PR elections. The classifications that we derive from these data will be among the main independent variables in the regressions below.

In order to test the party-strength hypothesis, we also make use of a dataset developed by Hankla (2006), who also tests the effect of party-strength on trade protection. As noted above, his dataset classifies democracies according to the degree to which national party leaders were able to choose candidates for legislative seats. This

method captures the spirit of party influence in the Grossman and Helpman model because it provides an obvious means by which party leaders can punish legislators who support regional issues over the national party. A country receives a score of 0 in the index if national party leaders chose candidates with no input from local primaries or nominating conventions. It receives a score of 1 if party leaders controlled access to the ballot, but voters could rank their preferences for candidates within a party – for example, using an open party list in a PR system, or an alternate-vote or single transferable vote in a majoritarian system. Finally, a country receives a score of 2 if candidates were chosen predominantly through primary elections or local party conventions. Following the method used in Hankla (2006), we create dummy variables for each of the three different rankings.

For testing the constituency-size hypothesis, we use a database developed by the Interparliamentary Union (2010) on the number of legislative constituencies in each country. The more legislative constituencies in a country, the smaller the fraction of the national population that the average constituency will represent. In smaller constituencies, the impact that special regional interests will have in a legislative bargaining process may be magnified. This dataset has one drawback in that it only tells us what the current number of legislative constituencies is in each country and does not give historical data.⁸ It does, however, tell us when the country's electoral laws were last changed. Therefore, we can extrapolate backwards in time to determine the number of legislative constituencies until at least that point in time.

When testing the country-size hypothesis, we use data on a country's land area and population as reported by the World Bank's World Development Indicators website.

We also include control variables describing a country's legal and colonial origins.

⁸The dataset was downloaded from the Interparliamentary Union on February 16, 2010.

Both data series come from Persson and Tabellini (2003), who, in turn, drew on work by La Porta et. al. (1997) for the legal origin variables and Wacziarg (1996) for the colonial origin variables. As described below, we will also use a country’s latitude and date of adoption of its constitution as instrumental variables for government type. These data series also come from Persson and Tabellini (2003).

5 Regression Analysis

5.1 Preliminary Regressions

We begin our regression analysis by re-establishing the correlation between PR systems and lower levels of trade protection. Our regressions in this section take the general form of

$$\overline{\log(1 + \tau_{i,t})} = \beta_0 + \beta' \overline{\mathbf{I}_{i,t}} + \gamma' \overline{\mathbf{X}_{i,t}} + \overline{\varepsilon_{i,t}}$$

where $\tau_{i,t}$ is a measure of ad-valorem trade protection (usually trade-weighted tariffs) in country i in year t , $\mathbf{I}_{i,t}$ is a vector of relevant institutional variables, $\mathbf{X}_{i,t}$ is a vector of non-institutional control variables, and $\varepsilon_{i,t}$ is a residual error term. As noted below, some of our institutional variables will be treated as endogenous. Consequently, $\overline{\mathbf{I}_{i,t}}$ will represent predicted variables from the first-stage regression of a two-stage least squares (2SLS) estimator in some regressions. The bars above the variables represent the fact that although our data is available to us in a panel format, having both cross-sectional and time dimensions, there is little to no within-country variation in the institutional variables that we are interested in during the time period for which we have data. Therefore, we use a between estimator that uses the within-country

means of the variables in all of our regressions.⁹

Table 3 shows the results of regressions of trade protection (as measured by the trade-weighted average ad-valorem tariff) on different types of governmental institutions. Column 1 shows us that countries that have a PR electoral systems have significantly lower levels of trade protection than countries with majoritarian systems. Besides being statistically significant, the coefficient on the PR dummy variable is relatively large; -0.0460 is equal to almost 90% of a standard deviation in the dependent variable and about 62% of its average level. In other words, what this coefficient tells us is that the average tariff would fall by 4.6% if a country were to switch from a majoritarian electoral system to a proportional one, holding other variables constant.

Column 2 of Table 3 introduces some control variables into our basic regressions. The control variables found in Column 2 are colonial and legal origin dummy variables as coded by Persson and Tabellini (2003). Evans (2009) notes that a country's choice of political system is influenced by its colonial history. For example, most former British colonies use a Westminster-style parliamentary system with majoritarian constituencies for their government. However, a country may also have inherited a certain attitude towards trade from their former colonial rulers. Therefore, we include dummy variables for UK, Spanish and other colonial histories. Related to, but slightly different from, the colonial origin dummy variables, are the legal origin dummy variables found in Column 2. LaPorta et. al. (1997) show that foreign direct investment flows into countries are highly dependent on a country's legal system. Specifically, they find that foreign investors are more likely to invest in countries with an English common law legal system than countries with civil law traditions similar to those used in France and other parts of continental Europe. Differing attitudes

⁹In the regressions where OTRI is the dependent variable, the fact that we only have one year worth of data means that we will use a simple OLS estimator.

towards foreign investment may carry over more generally to economic openness. At the same time, different legal systems may plausibly be correlated with different types of governments. To this end, we include dummy variables for English common law legal origins, French civil law legal origins and Socialist legal origins (primarily found in former Communist countries). Anticipating our analysis of the effect of country size on trade policy below, we also use the log of a country’s population density and the log of the country’s land area as controls. The inclusion of these variables does not overturn our main result showing that PR systems have significantly lower trade barriers than majoritarian systems. However, the coefficient on the PR dummy is slightly smaller in magnitude than in Column 1.

Column 3 of Table 3 further explores the possibility that a country’s choice of political system may be influenced by variables related to trade policy. In particular, following Evans (2009), we use a two-stage least squares (2SLS) estimator that predicts a country’s propensity to use a PR or mixed electoral system as a linear function of the colonial dummies, the country’s population, the absolute value of a country’s latitude,¹⁰ and dummy variables indicating whether a country’s constitution was adopted between 1921 and 1950, between 1951 and 1980, or in 1981 or later.¹¹ This step strengthens the coefficient on the (instrumented-for) PR system dummy. The coefficient is still negative and significant at the 5% level, and its magnitude has increased considerably to -0.117 .

¹⁰We considered the possibility that a country’s latitude might have a direct effect on its level of trade protection and found that our results were not significantly changed. Regression tables from this exercise are available upon request.

¹¹Hall and Jones (1999) and Persson and Tabellini (2003) argued that the latter two sets of variables are good predictors of the type of electoral system that a country will adopt. They are also plausibly excludable from a country’s trade policy preferences.

First stage results from the 2SLS estimator can be found in Table A1. Note that, while we use the instrumental variables typically found in this literature, the F-statistics on many of the first stage regressions are relatively low. Our 2SLS estimates may therefore suffer from a weak instruments problem.

Columns 4-6 of Table 3 introduce alternate ways of measuring trade openness in our dependent variables. Column 4 uses the log of the country's trade to GDP ratio as the dependent variable. The advantage of this measure is that it should capture the effects of all the pieces of country's trade policy on its trade flows. The disadvantage of it is that it is also influenced by several non-policy related variables. However, as noted above, we use controls for country size in our regressions, which is probably the most significant non-policy factor that would affect a country's trade to GDP ratio. Not surprisingly, the coefficients on the two country size variables are negative and significant, confirming our intuition small countries have a larger volume of trade relative to GDP. However, the coefficient on the PR dummy, while positive as expected,¹² is no longer significant. While it could be that the coefficient on the PR system dummy is simply not robust to this change in the dependent variable, this result is also consistent with our hypothesis that one of the channels through which PR systems are correlated with lower levels of trade protection is via country size, a possibility that we will explore further below.

Column 5 uses the ratio of the total amount of all trade-related taxes collected (including tariffs, import processing fees, export taxes and so forth) to the total volume of trade as the measure of trade protection. This change in the dependent variable does not significantly affect our results. The coefficient on the PR dummy variable is still negative and highly significant.

Column 6 introduces the Overall Trade Restriction Index (OTRI) developed by Anderson and Neary (2005) and Kee, Nicita and Olarreaga (2008, 2009) as our protection measure.¹³ The OTRI data are only available for one year and not for all

¹²Note that a lower level of trade protection will result in a higher volume of trade, other things equal. Hence, the predicted signs of the coefficients in our regression are reversed for this specification.

¹³The data that we use comes from the World Trade Indicators 2008 CD-ROM provided by the

countries in our sample. Therefore, the OLS regression found in Column 6 has a reduced sample size. Also, because the ad-valorem equivalents of the NTBs and the import demand elasticities used to calculate the OTRI are themselves estimates, the OTRI will be measured with some error. The two factors appear to impact the efficiency of the estimates in Column 6. While the coefficient on PR systems is still negative, it is no longer significant.

The results noted above confirm what has already been noted in the literature on trade protection and government structure. Specifically, countries with PR electoral systems generally have lower trade barriers than countries with majoritarian electoral systems. We now proceed to examining some of the mechanisms that have been hypothesized about in the literature that may explain this correlation.

5.2 Country Size Hypothesis

Table 4 looks at the country size hypothesis by running regressions on the logs of a country's population density and land area.¹⁴ The results in Column 1 show us that a country's population is indeed positively correlated with trade protection. The coefficient on the population density variable is positive and significant at the 5% level. It is moderately large in magnitude – a one standard deviation increase in the log of population density increases the tariff rate by about 1/3 of a standard deviation and slightly more than 1/4 of its average value. The coefficient on the land area is also positive and significant. Therefore, the country size variables seem to be positively associated with trade protection.

Column 2 includes the PR and mixed system dummy variables in the regression.

World Bank.

¹⁴Because the logs of population density, total population and land area are perfectly collinear, we do not include population in the regressions. However, we can infer the effect of total population by adding the coefficients on population density and land area together.

Despite the inclusion of the new variables, the coefficient on the population density variable remains positive and significant (though somewhat less so than in Column 1). The coefficients on the PR and mixed system dummy variables are both negative and highly significant. Notably, the magnitude of the coefficient on the PR dummy variable is somewhat smaller in this column than it was in Column 1 of Table 2. This result is consistent with the country-size hypothesis, which claims that at least some of the correlation between a PR political system and lower trade barriers can be explained by country size. Column 3, which is similar to Column 1 in that it removes the PR and mixed system dummies, but adds colonial and legal origin dummy variables as controls,¹⁵ confirms this basic result.

Columns 4 and 5 use the 2SLS estimator. Column 4 replicates the results found Column 3 of Table 3. Column 5 removes the population density and land area variables for comparison purposes. When population density and land area are not included in the 2SLS regressions, the coefficient on the PR dummy variable increases slightly in magnitude. Again, this result is consistent with the country size hypothesis.

Column 6, not surprisingly, confirms that country size on both the population density and land area dimensions is negatively associated with a country's trade/GDP ratio. Less obviously, the coefficients on the PR and mixed system dummy variables are not significant after controlling for country size. In Column 7, when trade taxes are the dependent variable, the pattern is reversed—the coefficients on the country size variables are insignificant while the coefficients on the PR and mixed system dummy variables are negative and significant. Only the land area variable is significant when

¹⁵Column 3 does not use a 2SLS estimator, as it seems implausible that a country's land area and population would be endogenously affected by its trade policy. However, the PR and mixed dummy variables will be instrumented for in Column 4.

the OTRI is used as the dependent variable in Column 8.

These results indicate that there is an impact on trade protection from country size in the manner outlined in the country size hypothesis above. However, this factor does not appear to eliminate the possibility of other channels through which lower levels of trade protection might be correlated with PR electoral systems.

5.3 Constituency Size Hypothesis

Table 5 examines the constituency size hypothesis outlined above by performing a series of regressions incorporating the number of legislative constituencies in a country and a dummy variable indicating whether a country has one legislative constituency as a regressor. Our data on legislative constituencies come from survey data collected by the Interparliamentary Union.

Column 1 of Table 5 establishes that there is a positive correlation between the number of legislative constituencies that a country has and its level of trade protection. While the magnitude of the coefficient is relatively small, it is still significant at the 5% level. Therefore, a country that has a large number of legislative constituencies (which is more typical of a country with a majoritarian electoral system than a PR system) will have higher trade barriers, other things equal. However, the coefficient on the one constituency dummy variable is both positive (the opposite of that suggested by the “strong” constituency size hypothesis) and insignificant. These results are consistent with the “weak” constituency size hypothesis – that tariffs should be increasing in the number of legislative constituencies that a country has – but not the “strong” hypothesis – that a country with only one legislative constituency should tend towards free trade.

When we move to Column 2 and include dummy variables for PR and mixed

electoral systems into our regressions, we find that the coefficient on the number of constituencies, while still positive, is no longer significant. Interestingly, the coefficient on the PR system dummy, while still negative, is no longer significant as well. These two variables had strongly significant coefficients when included individually in regressions, but they lose their significance when included jointly, even though the sample size has not substantially changed. Collinearity may be a suspect here—the correlation coefficient on the two variables is -0.5868 , and our sample size is not very large. It is hard to interpret this result in the presence of collinearity. It may be the case that this result is consistent with the constituency size hypothesis, and the coefficient on constituencies would become significant if the sample size were larger. However, it could also be the case that the number of constituencies is just a good predictor for the PR dummy variable, which is the variable that really drives the results. The coefficient on the one constituency dummy variable remains insignificant, albeit slightly negative.

Columns 3 through 5 of Table 5 examine what happens when we include controls for colonial and legal origin and use the 2SLS estimator, treating the number of constituencies and type of electoral system as endogenous. In Column 3 we treat the number of constituencies as endogenous, and as in Column 1, we do not include the dummy variables for PR and mixed electoral systems. Just as in Column 1, the coefficient on the number of constituencies is positive and significant, and it has also increased in magnitude. However, also just as in Column 1, the coefficient on the one constituency dummy variable is positive and insignificant. In Column 4, we include the PR and mixed system dummy variables and treat both as endogenous. We treat the constituencies variable as exogenous and do not instrument for it. The result is that the coefficient on the constituencies variable is negative and insignificant, the

coefficient on the one constituency dummy is negative and insignificant and the coefficient on the PR dummy is negative and insignificant, though similar in magnitude to the regressions that do not include the constituencies variable. In Column 5, we treat the constituencies variable the PR and mixed system dummies all as being endogenous. Just as in Column 2, the coefficient on the number of constituencies variable is of the correct sign, but insignificant, and the coefficient on the one constituency dummy is positive and insignificant. Interestingly, the coefficient on the PR dummy has switched signs and exploded in magnitude, while remaining insignificant. This result is undoubtedly driven by the collinearity problems identified in Column 2, which are exacerbated by the instrumental variables approach. The PR dummy and number of constituencies variables as predicted by the first-stage regressions have a correlation of -0.9335 , thereby considerably weakening their individual predictive powers in a regression with a small sample.

Columns 6 through 8 of Table 5 largely replicate these results using different dependent variables. When the trade taxes ratio and OTRI are used as dependent variables, the coefficient on the number of constituencies is always of the predicted sign, but statistically insignificant, as is the coefficient on the PR dummy. Both coefficients have the incorrect sign and are insignificant when the trade/GDP ratio is used as the dependent variable. The coefficient on the one constituency dummy variable is of the correct sign and moderately significant when the trade/GDP ratio is used as the dependent variable, but is of the incorrect sign for the other two dependent variables.

Looking at these results as a whole, it is difficult to either rule out or definitively confirm the “weak” constituency size hypothesis. The number of legislative constituencies in a country matters when the PR system dummy variable is not included

in the regression. However, when the PR dummy is included, the coefficients on both the constituencies variable and the PR dummy become insignificant, which we again suspect may be accounted for by collinearity.

Conversely, it is hard to find any compelling evidence for the “strong” constituency size hypothesis, which is the hypothesis that follows most directly from the Grossman and Helpman model. There are two possible reasons for this lack of evidence. The obvious explanation is that we cannot find evidence to support the strong hypothesis because the hypothesis is simply not correct. Secondly, we may not find evidence for the hypothesis because we only have four countries in our dataset that have one legislative constituency, thereby making our identification of the coefficient on the one constituency dummy variable rather weak. However, even the latter explanation poses problems for the Grossman and Helpman model. We have few observations of countries with only one legislative constituency because few such countries exist and are not representative of the majority of countries with a PR electoral system. That is, the Grossman and Helpman model does not exactly predict a “majoritarian” bias in protectionist trade policies, but rather a bias that arises from having multiple and heterogeneous legislative constituencies – a characteristic that is common to both majoritarian and PR electoral systems.

5.4 Party Strength Hypothesis

Table 6 examines the party strength hypothesis by running regressions using the index of party control over political nominations developed by Hankla (2006) as a regressor. More specifically, we create a dummy variable for countries that scored a 1 on the Hankla index and another for countries that scored a 2 (with a higher score representing a greater control by the national party over ballot access and

ordering). Column 1 establishes that the index is weakly negatively correlated with trade protection; the coefficients on both party strength index dummy variables are negative but insignificant. As predicted by the hypothesis, the coefficient on Party Strength = 2 dummy is greater in magnitude than that on the Party Strength = 1 dummy, but this difference is insignificant as well.

This basic result carries over into Column 2, where the PR and mixed system dummy variables are added to the regression. The coefficients on both party strength variables are negative but insignificant, and while the coefficient on the Party Strength = 2 dummy is greater in magnitude, the difference is insignificant. On the other hand, the coefficients on the PR and mixed system dummy variables are both negative and significant. Furthermore, the coefficients on the PR and mixed system dummies are very similar to what they were in Column 1 of Table 2. This result indicates that the party strength variables are not good predictors of a country's trade policy when controlling for the type of electoral system.

Columns 3 through 5 of Table 6 largely confirm these results when legal and colonial origin controls are added and the electoral regime is treated as endogenous. In Columns 3 and 5, the party strength variables are treated as endogenous as well, but are treated as exogenous in Column 4. In all three columns, the coefficients on the Party Strength = 2 dummy variable are still negative but insignificant, and in Column 5, the relative magnitudes of the coefficients on the two party strength variables are reversed. The coefficient on the PR dummy is not greatly affected by the changes in specification.

Columns 6 and 7 present an interesting result in that the variable on the Party Strength = 1 dummy variable is negative and significant, but that the coefficient on the Party Strength = 2 dummy variable is insignificant (and in Column 7, much

smaller in magnitude than the coefficient on Party Strength = 1). This non-monotonic result is not something that would be predicted by the party strength hypothesis.

The results described in Table 6 do not lend much support to the party strength hypothesis. The coefficients on the party strength variables are generally not significant, whether included separately or jointly with electoral regime in the regressions.

6 Conclusion

Our empirical tests find that countries that use list-PR electoral systems have lower levels of trade protection than countries with majoritarian electoral systems. These results are largely in line with the previous literature on this topic. However, our paper goes beyond the existing literature by testing the different explanations for this correlation. Of the three mechanisms that we test, country size is the only one that robustly explains even part of the correlation between PR systems and lower trade barriers. Our results indicated that the number of legislative constituencies found within a country is not a robust predictor of a country's level of trade protection once one controls for other relevant variables; in particular, countries with one electoral district do not seem to have lower trade barriers than other countries. Furthermore, we do not find any evidence that party strength is good predictor of a country's trade protection once we control for a country's electoral regime.

These results present a challenge to those writers theorizing about the relationship between political structures and trade protection. While we confirm the basic correlation between PR systems and lower trade barriers, we do not find convincing evidence supporting the major hypotheses in the literature that purport to explain that correlation. At best, we find that part of the correlation can be explained by the

country size hypothesis, which does not actually propose a causal link between PR systems and lower trade barriers. Consequently, we believe that researchers working on this topic will need to revisit the theories examining the link between government type and trade protection.

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Table 1 -- Conditional Summary Statistics

	PR		Mixed		Majoritarian	
	Obs	Mean	Obs	Mean	Obs	Mean
Log (# of Constituencies)	36	2.920	24	3.890	21	4.897
Party Nominations Index	36	0.645	26	0.278	26	0.322
Log (Land Area in square km)	36	11.960	26	12.637	26	12.290
Log (Population)	36	15.746	26	16.669	26	16.235

Table 2 -- Dependent Variable Summary Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
Log (1 + Avg. Tariff)	87	0.0743	0.0523	0.0065	0.3477
Log (Trade / GDP)	95	-0.6559	0.4918	-1.9399	0.4751
Log (1 + Taxes / Trade)	80	0.0282	0.0297	-0.0001	0.1215
Log (1 + OTRI)	69	0.09874	0.05988	0.02664	0.38662

Table 3 -- Preliminary Regressions

	(1)	(2)	(3)	(4)	(5)	(6)
	Log (1 + Avg. Tariff)	Log (1 + Avg. Tariff)	Log (1 + Avg. Tariff)	Log (Trade / GDP)	Log (1 + Taxes / Trade)	Log (1 + OTRI)
PR System Dummy Variable	-0.0460*** (0.0135)	-0.0341*** (0.0156)	-0.117*** (0.0522)	0.000908 (0.101)	-0.0260*** (0.00765)	-0.0268 (0.0171)
Mixed System Dummy Variable	-0.0284* (0.0143)	-0.0277 (0.0167)	-0.0994 (0.0809)	-0.118 (0.110)	-0.0185*** (0.00806)	0.0101 (0.0228)
UK Colony Dummy		0.0400* (0.0207)	0.0498* (0.0278)			
Spanish Colony Dummy		0.0480** (0.0201)	0.0836*** (0.0277)			
Other Colony Dummy		0.00440 (0.0153)	0.0101 (0.0211)			
UK Legal Dummy		-0.00876 (0.0251)	-0.0627 (0.0499)			
Socialist Legal Dummy		-0.00481 (0.0205)	-0.0117 (0.0268)			
French Legal Dummy		-0.00965 (0.0198)	-0.0446 (0.0272)			
Log (Population Density)		0.0144*** (0.00492)	0.0172* (0.00935)			
Log (Land Area in square km)		0.00643 (0.00393)	0.00568 (0.00966)	-0.122*** (0.0359)		
Constant	0.103*** (0.0107)	-0.0552 (0.0673)	0.0177 (0.151)	6.751*** (0.444)	0.0442*** (0.00577)	0.108*** (0.0158)
Observations	503	487	444	1702	537	
R-squared	0.122	0.291	.	0.367	0.133	0.078
Number of countries	87	82	70	95	80	69
Endogenous Variables	None	None	PR, Mixed	None	None	None

Standard errors in parentheses
 *** p<0.01, ** p<0.05, * p<0.1

Table 4 -- Country Size and Trade Protection

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Log (1 + Avg. Tariff)	Log (1 + Avg. Tariff)	Log (1 + Avg. Tariff)	Log (1 + Avg. Tariff)	Log (1 + Avg. Tariff)	Log (Trade / GDP)	Log (1 + Taxes / Trade)	Log (1 + OTRI)
Log (Population Density)	0.0115** (0.00482)	0.00920* (0.00476)	0.0156*** (0.00491)	0.0172* (0.00935)		-0.122*** (0.0359)	8.75e-05 (0.00282)	0.00869 (0.00541)
Log (Land Area in square km)	0.00708* (0.00367)	0.00477 (0.00367)	0.00796** (0.00383)	0.00568 (0.00966)		-0.187*** (0.0281)	-0.000395 (0.00217)	0.00853** (0.00408)
PR System Dummy Variable		-0.0407*** (0.0137)		-0.117** (0.0522)	-0.129** (0.0548)	0.000908 (0.101)	-0.0262*** (0.00779)	-0.0184 (0.0179)
Mixed System Dummy Variable		-0.0287*** (0.0142)		-0.0994 (0.0809)	-0.0435 (0.0761)	-0.118 (0.110)	-0.0184** (0.00823)	0.00950 (0.0228)
UK Colony Dummy			0.0406* (0.0211)	0.0498* (0.0278)	0.0389 (0.0287)			
Spanish Colony Dummy			0.0393* (0.0201)	0.0836*** (0.0277)	0.0661** (0.0287)			
Other Colony Dummy			0.00131 (0.0154)	0.0101 (0.0211)	0.0145 (0.0234)			
UK Legal Dummy			0.00731 (0.0243)	-0.0627 (0.0499)	-0.0419 (0.0513)			
Socialist Legal Dummy			-0.00149 (0.0208)	-0.0117 (0.0268)	-0.00799 (0.0296)			
French Legal Dummy			-0.00102 (0.0198)	-0.0446 (0.0272)	-0.0283 (0.0304)			
Constant	-0.0588 (0.0580)	0.00522 (0.0604)	-0.109* (0.0630)	0.0177 (0.151)	0.141** (0.0631)	6.751*** (0.444)	0.0487 (0.0347)	-0.0376 (0.0684)
Observations	503	503	487	444	444	1702	537	69
Number of country/index	87	87	82	70	70	95	80	0.121
R-squared	0.069	0.161	0.243	.	.	0.367	0.134	None
Endogenous Variables	None	None	None	PR, Mixed	PR, Mixed	None	None	None

Standard errors in parentheses

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

Table 5 -- Constituencies and Protection

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Log (1 + Avg. Tariff)	Log (1 + Avg. Tariff)	Log (1 + Avg. Tariff)	Log (1 + Avg. Tariff)	Log (1 + Avg. Tariff)	Log (Trade / GDP)	Log (1 + Taxes / Trade)	Log (1 + OTRI)
Log (# of Constituencies)	0.00858*** (0.00369)	0.00445 (0.00463)	0.0553* (0.0317)	-0.0175 (0.0169)	0.212 (0.629)	0.0154 (0.0525)	0.00313 (0.00322)	0.00899 (0.00679)
One Constituency Dummy	0.00656 (0.0256)	-0.00774 (0.0273)	0.205 (0.138)	-0.0949 (0.0744)	0.852 (2.598)	0.495* (0.291)	0.00168 (0.0175)	0.0684* (0.0404)
PR System Dummy Variable		-0.0207 (0.0151)		-0.124 (0.0757)	0.285 (1.151)	-0.0476 (0.135)	-0.0118 (0.00941)	-0.00843 (0.0222)
Mixed System Dummy Variable		-0.00600 (0.0135)		-0.0609 (0.0748)	0.0544 (0.420)	-0.164 (0.128)	-0.00695 (0.00834)	0.0162 (0.0230)
UK Colony Dummy			0.0640* (0.0327)	0.0336 (0.0294)	0.143 (0.319)			
Spanish Colony Dummy			0.0778*** (0.0289)	0.0782*** (0.0252)	0.0689 (0.0969)			
Other Colony Dummy			0.00701 (0.0217)	0.0138 (0.0197)	-0.0146 (0.107)			
UK Legal Dummy			-0.0688 (0.0474)	-0.0323 (0.0443)	-0.178 (0.430)			
Socialist Legal Dummy			0.000205 (0.0292)	-0.000662 (0.0251)	-0.00207 (0.0932)			
French Legal Dummy			-0.0154 (0.0260)	-0.0392 (0.0263)	0.0299 (0.212)			
Log (Population Density)			-0.00696 (0.0165)	0.0179** (0.00797)	-0.0516 (0.192)	-0.134*** (0.0435)		
Log (Land Area in square km)			-0.0209 (0.0174)	0.00796 (0.00826)	-0.0723 (0.221)	-0.202*** (0.0382)		
Constant	0.0379** (0.0147)	0.0647** (0.0249)	0.129 (0.171)	0.0365 (0.137)	0.187 (0.653)	2.386*** (0.497)	0.0194 (0.0165)	0.0614* (0.0356)
Observations	450	450	398	398	398	1195	451	68
Number of countries	0.080	0.106	.	.	.	0.387	0.094	0.111
R-squared	82	82	67	67	67	88	74	
Endogenous Variables	None	None	Constituencies	PR, Mixed	Constituencies, PR, Mixed	No	No	No

Standard errors in parentheses
 *** p<0.01, ** p<0.05, * p<0.1

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Log (1 + Avg. Tariff)	Log (1 + Avg. Tariff)	Log (1 + Avg. Tariff)	Log (1 + Avg. Tariff)	Log (1 + Avg. Tariff)	Log (Trade / GDP)	Log (1 + Taxes / Trade)	Log (1 + OTRI)
Party Strength Index = 1	-0.0159 (0.0132)	-0.00938 (0.0130)	-0.00858 (0.0670)	0.00897 (0.0176)	-0.287 (1.660)	-0.0200 (0.108)	-0.0152** (0.00706)	-0.0293** (0.0115)
Party Strength Index = 2	-0.0291 (0.0187)	-0.0227 (0.0183)	-0.164 (0.146)	-0.0186 (0.0371)	-0.0331 (0.881)	-0.209 (0.148)	-0.0175 (0.0119)	-0.00202 (0.0215)
PR System Dummy Variable		-0.0429*** (0.0138)		-0.116** (0.0540)	0.141 (6.843)	0.0255 (0.104)	-0.0235*** (0.00755)	-0.0208 (0.0166)
Mixed System Dummy Variable		-0.0296** (0.0144)		-0.102 (0.0783)	-1.122 (28.36)	-0.129 (0.111)	-0.0189** (0.00789)	0.00976 (0.0225)
UK Colony Dummy			0.0542 (0.0421)	0.0533* (0.0289)	-0.0425 (2.873)			
Spanish Colony Dummy			0.0421 (0.0374)	0.0820*** (0.0293)	-0.0214 (2.475)			
Other Colony Dummy			0.0387 (0.0525)	0.0150 (0.0212)	-0.368 (11.25)			
UK Legal Dummy			-0.0482 (0.0781)	-0.0719 (0.0548)	0.0165 (3.339)			
Socialist Legal Dummy			-0.0684 (0.0954)	-0.0225 (0.0320)	0.575 (17.64)			
French Legal Dummy			-0.0268 (0.0355)	-0.0468* (0.0278)	0.0406 (2.493)			
Log (Population Density)			0.0229** (0.00909)	0.0180* (0.00951)	0.0779 (1.647)	-0.118*** (0.0360)		
Log (Land Area in square km)			0.0184 (0.0167)	0.00802 (0.0110)	-0.00179 (0.463)	-0.180*** (0.0290)		
Constant	0.0813*** (0.00695)	0.107*** (0.0111)	-0.221 (0.209)	-0.102 (0.162)	0.206 (7.693)	6.667*** (0.454)	0.0489*** (0.00596)	0.113*** (0.0172)
Observations	503	503	444	444	444	1702	537	
R-squared	0.037	0.140	0.070	0.070	0.070	0.381	0.196	0.123
Number of countryindex	87	87	70	70	70	95	80	69
Endogenous Variables	None	None	Party Strength	PR, Mixed	Party Strength, PR, Mixed	None	None	None

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table A1 -- First Stage Instrumental Variables Results

	(1)	(2)	(3)	(4)	(5)
	PR System Dummy Variable	Mixed System Dummy Variable	Log (# of Constituencies)	Party Strength Index = 1	Party Strength Index = 2
UK Colony Dummy	-0.0649 (0.170)	-0.188 (0.171)	-0.301 (0.572)	0.0140 (0.172)	-0.0316 (0.134)
Spanish Colony Dummy	0.427** (0.194)	-0.0565 (0.196)	-1.257* (0.643)	0.0176 (0.197)	0.102 (0.153)
Other Colony Dummy	0.159 (0.150)	-0.0800 (0.152)	-0.730 (0.493)	-0.0475 (0.153)	0.149 (0.118)
Log (Population)	-0.103*** (0.0361)	0.0707* (0.0363)	0.401*** (0.118)	-0.0520 (0.0366)	0.0322 (0.0284)
Latitude	0.816* (0.423)	-0.243 (0.426)	-2.864** (1.382)	0.733* (0.429)	-0.0303 (0.333)
Constitution 1921 - 1950	0.281 (0.170)	0.0427 (0.171)	-0.798 (0.541)	-0.0425 (0.172)	-0.128 (0.133)
Constitution 1951 - 1980	0.0903 (0.162)	-0.128 (0.164)	-0.434 (0.522)	0.214 (0.165)	-0.171 (0.128)
Constitution Since 1980	-0.0535 (0.135)	0.0166 (0.136)	-0.322 (0.436)	0.0647 (0.138)	-0.242** (0.107)
Constant	1.693** (0.725)	-0.697 (0.730)	-0.916 (2.402)	0.783 (0.736)	-0.265 (0.570)
Observations	1479	1479	1048	1479	1479
R-squared	0.344	0.131	0.353	0.121	0.121
F-Statistic	4.060	1.171	4.091	1.063	1.071
Number of Observations	71	71	69	71	71

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

Standard errors in parentheses