Electoral Rules and Trade Protection

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Abstract

We argue that differences in electoral rules explain the variation in trade protection across countries. We develop a theoretical model and show under which conditions majoritarian systems generate higher levels of protection than proportional systems. The main driving force is that as only swing districts count politically, majoritarian systems have fewer domestic counterforces to industry protection. In the empirical part of the paper this prediction is confirmed for a broad set of trade protection indices. In addition, the results are robust for an instrumental variables approach that takes account of the endogeneity of political institutions.

1 Introduction

By now it is well known that trade protection is foremost a political phenomenon. As there are few economic explanations for the persistence of tariffs and quota, nor for the recent rise in anti-dumping measures, most researchers have focussed on political factors to explain the barriers to international trade. The political economics literature provides many possible answers to the question why policy makers resort to trade protection, see Rodrik (1995) for a survey of the literature. However, in answering that question, one important element seems to be underexposed: can political economics explain why trade policies differ so much across countries?

This paper addresses that question. We argue that differences in political institutions partly explain the variation in trade policy across countries. In a theoretical model we show under which conditions a majoritarian electoral system generates a higher level of protection when compared to a proportional system. In the empirical part we show that

differences in electoral rules have significant power to explain the variation in trade protection across countries.

In the theoretical part of this paper we model trade policy making by a country in which each of three districts produces a geographically specific product. For example, one can think of steel production in the US that is clustered in the Mid-West, and wine production in the EU that is concentrated in the Mediterranean countries.[1] At the heart of our approach is the probabilistic voting model where districts differ in the number of swing voters, as developed by Dixit and Londregan (1996). We show that the equilibrium tariff schedule in a proportional election reflects the number of swing voters in each district compared to the national average. Announcing a higher tariff on a product induces swing voters to support the party in the district where this tariff increases the return to a specific factor. However, a higher tariff in one region loses votes in the other districts because of higher consumer prices. In a majoritarian system, legislators are selected in local elections. Following Persson and Tabellini (1999), we assume that each party has a safe district and concentrates campaign efforts on winning the swing district. When compared to a proportional system, we show that in a majoritarian election each party announces a higher tariff on the product that originates from the swing district. In addition, the average level of protection is higher with a majoritarian electoral rule, for swing voters in electorally unimportant districts do not form a counterforce to trade protection.

In the empirical part of the paper we show that countries that have a majoritarian system indeed have a higher level of trade protection. We think this is a new result in the empirical literature, see the papers discussed below. Due to data limitations, other papers have concentrated on OECD countries.[2] Because recently the scope of trade protection data has increased, we are able to examine the relation between electoral rules and protection for a broader set of countries.

2 Related Literature

A few theoretical papers present models that have close connections to ours. Mayer (1984) argues that in capital-abundant economies pro-

[1] Krugman (1991) documents clustering for the US and Brulhart (1998, 2001) analyzes spatial industry concentration patterns in the EU. Traistaru and Martincus (2003) show that economic integration in the Mercosur area has led to geographical clustering of industries across its member states.

[2] Moreover, these papers treat the trade policy of the EU countries as individually determined, possibly to increase the number of observations. We question the validity of this choice, as EU trade policy is uniform for all member states.

tection can be explained by the median voter theorem, for median endowments are relatively labor intensive compared to the economy as a whole. Yang (1995) examines the case where trade policy is shaped by electoral competition when two parties compete for swing votes. In his set up, citizens differ in their endowment of capital, where individuals who have a higher capital endowment also have a higher income. As responsiveness to trade policies declines with income, citizens with low capital endowment are more likely to shift the election result. We argue that if industries are clustered geographically, protection serves as a local public good to a geographical specific factor of production. Compared to that paper, our innovation is that we analyze the effects of political institutions on trade policy when electoral districts differ in their trade policy objective.

It is clear that our study is much inspired by the recent progress in comparative political economy that analyzes how electoral rules affect the spending on local public goods. Persson and Tabellini (1999) show that a majoritarian system leads to high spending on local public goods (roads, swimming pools) and low spending on universal public goods (health care, social security). Milesi-Ferretti et al. (2002) offer an alternative model that focuses on the trade-off between geographical and social constituencies when citizens strategically delegate policy making. In their model a proportional system is biased towards social constituencies and a majoritarian system is biased towards geographical constituencies. Based on Milesi-Ferretti et al. (2002), Grossman and Helpman (2006) also argue that there is a protectionist bias in majoritarian systems. In contrast to our model their protectionist bias in majoritarian political systems is mainly driven by post-electoral bargaining among regionally elected politicians. However, qualitatively they come to the same predictions for empirical testing.

With respect to the empirical evidence on the political economy of trade policy, many studies show that for individual countries there is ample evidence that political incentives explain the variation in protection across industries, see Gawande and Krishna (2003) for a survey. However, there are only very few papers that examine whether political economy considerations can explain the variation in protection across countries.[3] Using data from 24 OECD countries (including the EU-countries) Rogowski (1987) shows that there is a negative correlation between trade protection and majoritarian electoral rules. Mansfield

[3]Recently, Dutt and Mitra (2002, 2005) have combined the median voter model and the Stolper-Samuelson theorem. They show that countries that have left-wing governments and a high capital-labor ratio have high tariffs. However, they do not consider differences in electoral rules.

and Busch (1995) analyze non-tariff barriers for 14 OECD countries in two years. They show that non-tariff barriers are increasing in the number of districts and that a majoritarian system is associated with a lower level of protection. In addition to the limited number of observations in these two studies, the focus on OECD countries creates some additional problems. For the OECD sample in Mansfield and Busch (1995), the distinction between majoritarian and proportional systems implies splitting the sample in Anglo-Saxon countries and those in continental western Europe. Our empirical results differ from these findings because we use a larger data set that includes many non-OECD countries.[4] For this larger set of countries we find opposite results when compared to the empirical studies discussed above.

3 The economic model

Consider a country consisting of three districts $i = 1, 2, 3$. Districts have equal population size with mass unity and there is no migration between districts. Each district produces a good X_i for which it uses labor and a district-specific capital, and it produces and exports a numeraire good X_0 for which it uses labor alone, where one unit of labor makes one unit of the numeraire good. As the domestic and world market prices of the numeraire good are normalized to one, the economy-wide wage rate is unity as well. All goods are produced under perfect competition.

Based on a standard quasi-linear utility function $U = c_0 + \sum U(c_i)$, the typical citizen receives indirect utility from the following sources. First, indirect utility from consumption is $E + \sum_i S_i(p_i)$, where E are expenditures and $S_i(p_i)$ is the consumer surplus of good X_i for the whole country. As we assume a linear demand curve, this means that $dS(p_i)/dp_i = -X_i^d(p_i) < 0$, where $X_i^d(p_i)$ is the demand for good i. Second, citizens produce the regional specific product for which they as a group receive labor income L_i and the return to the specific capital.[5] The revenue of the district specific capital is $\Pi(p_i)$, with $d\Pi(p_i)/dp_i = X_i^s(p_i) > 0$, where $X_i^s(p_i)$ is the equilibrium supply of good i that follows from cost minimization by regional firms. Third, we normalize all world market prices to one and assume specific tariffs so that the domestic price of good X_i is one plus the tariff rate ($p_i = 1 + \tau_i$). Tariff revenue $\sum_i \tau_i M_i$

[4] However, compared to the other studies, we exclude countries that belong to the EU.

[5] We assume that district specific capital is embodied in individuals living within the district and can not be traded on a national or international market. Although this may seem a restrictive assumption, allowing for the case where citizens in a district hold a higher share than citizens outside the region of the district specific capital does not qualitatively change the results.

(τ_i) on imports $M_i = X_i^d(\tau_i) - X_i^s(\tau_i)$ is distributed equally lump sum over the citizens. In the following we assume that $\tau_i \geq 0$, so that there are no import subsidies. To summarize, the sum of utility in a district is:

$$V_i = L_i + \Pi_i(\tau_i) + \frac{1}{3}\left[\sum_{i=1}^{3} S_i(\tau_i) + \sum_{i=1}^{3} \tau_i M_i(\tau_i)\right] \tag{1}$$

The change in welfare of a citizen in district i from a change in the tariff structure is:[6]

$$\frac{\partial v_i}{\partial \tau_i} = X_i^s(\tau_i) - \frac{1}{3}\left[X_i(\tau_i) - \tau_i M_i'(\tau_i)\right] = 0 \tag{2a}$$

$$\frac{\partial v_i}{\partial \tau_{-i}} = -\frac{1}{3}X_{-i}^s(\tau_k) + \frac{1}{3}\tau_{-i} M_{-i}'(\tau_{-i}) = 0 \tag{2b}$$

where $M_i' < 0$ and the subscript $-i$ denotes all products other than i. The equations above show that on the one hand an individual at the margin benefits from an increase in the return to the district specific capital. On the other hand, he has one-third share in the decline in the national consumer surplus and in the reduction in trade tax revenue (that falls because of a decline in imports) that follow a tariff increase. It follows that the optimum tariff rates for a citizen in district i are:

$$\tau_i^* = \frac{2X_i^s(\tau_i^*)}{-M_i'(\tau_i^*)} > 0 \tag{3a}$$

$$\tau_{-i}^* = -\frac{X_{-i}^s(\tau_k^*)}{-M_{-i}'(\tau_k^*)} < 0 \tag{3b}$$

A citizen prefers a positive tariff on the product that originates from her district. By contrast, citizens prefer import subsidies on products that originate from other districts. By summing over individuals in the country, the socially optimal tariff rate on product X_i maximizes:

$$V^S(\tau_i) = \Pi_i(\tau_i) + S_i(\tau_i) + \tau_i M_i \tag{4}$$

The first-order condition for optimal social welfare is:

$$\frac{dV^S(\tau_i)}{d\tau_i} = \tau_i M_i' = 0 \tag{5}$$

Clearly, with positive import demand this condition is satisfied only if $\tau_i = 0$. This has the following implications. First, if the policy

[6] $d\left[\tau_i M(\tau_i)\right]/d\tau_i = M_i + \tau_i M_i'$. In addition, market clearing requires $X_i^d(\tau_i) = X_i^s(\tau_i) + M_i(\tau_i)$, so that $dS(\tau_i)/d\tau_i = -X_i^d(\tau_i) = -X_i^s(\tau_i) - M_i(\tau_i)$.

maker could use non-distortionary taxation and is able to target public spending lump sum to individuals and regions, she would set all tariffs to zero. If alternative redistribution instruments are distortionary, tariffs will be used complementary to these other instruments. Second, when districts set their own trade policy, each citizen would opt for free trade. By contrast, centralization allows the districts to 'extend' a tariff on the home product to the imports of the two other regions. This increases the rents to the specific factor without a fall in the consumer surplus of the same size.

4 The political economy model

The main prediction of this section will be that electoral rules matter for trade policy outcomes. First, we will introduce the general political model. Then we will consider two electoral rules, where we draw on the model provided in Persson and Tabellini (2000) for local public goods.

Suppose that the formation of a national trade policy is in the hands of a single centralized legislature that decides by majority voting. Two parties $P = L, R$ compete in an election for seats in the centralized legislature. In the campaign, the two parties simultaneously announce trade policy platforms Γ^L and Γ^R (the tariff rates on the three products) to maximize the probability of winning the election, given the policy offered by the other party. Individual j in district i votes for party R if:

$$v_i^j(\Gamma^R) > v_i^j(\Gamma^L) + \sigma_i^j + \delta \tag{6}$$

where $v_i^j(\Gamma^P)$ are the benefits that a citizen receives from the tariff schedule offered by one of the parties. The parameter σ_i^j captures the popularity bias for party L (which may be negative) of this citizen. We assume that σ_i has a uniform distribution $[-1/2\alpha_i + \sigma_i^m, \sigma_i^m + 1/2\alpha_i]$ that is common knowledge. Hence, districts may differ in their median ideology σ_i^m, and in the marginal density α_i of the distribution of this ideology. Clearly, the swing voter will have characteristics $\sigma_i^s = v_i(\Gamma^R) - v_i(\Gamma^L) - \delta$.

In addition, at the time of the election, there will be a nation-wide bias towards party L that takes the value δ. We assume that the expected value of δ is equal to zero and that δ is drawn from a uniform distribution over $\left[-\frac{1}{2}, \frac{1}{2}\right]$. This nation-wide preference is only revealed to the parties after they have announced their policy platforms. When it turns out that $\delta > 0$, the electorate has a bias towards party L. What is important is that δ is a random event at the moment that the parties commit to their trade policy. Hence, the vote share that such a platform will generate in each district is a random event as well, for neither of the parties knows on the basis of (6) who will be the swing voter.

Suppose that districts can be ranked according to their average bias towards party L so that $\sigma_1^m < \sigma_2^m < \sigma_3^m$. Further, assume that $\alpha_2 > \alpha_1 = \alpha_3$, which implies that in district 2 voters are clustered more closely around the average ideological position and districts 1 and 3 have equal density. Stated differently, given the promise of the other party, a promise to increase the tariff in district 2 wins more votes than offering an identical tariff increase on goods from the other two districts. To simplify the analysis further let $\sigma_2^m \alpha_1 = 0$ so that median preferences in district 2 are zero, and $\sigma_1^m \alpha_1 + \sigma_3^m \alpha_3 = 0$ so that ex ante there is no national bias towards one of the parties.

The two parties maximize their expected vote share conditional on the to be revealed nation wide popularity δ with the goal of obtaining a majority in the legislature. Call $f(\sigma_i^j)$ the density function that transforms each type of voter σ_i^j in the number of votes so that the vote share of party R is $\pi_i^R = \int_{-1/2\alpha_i+\sigma_i^m}^{\sigma_i^s} f(\sigma_i^j) d\sigma_i^j = \left|\alpha_i \sigma_i^j\right|_{-1/2\alpha_i+\sigma_i^m}^{\sigma_i^s}$. From (6) we know the characteristics of the swing voter σ_i^s, so that the vote share of party R in district i is:

$$\pi_i^R = \alpha_i \left[v_i(\Gamma^R) - v_i(\Gamma^L) - \sigma_i^m - \delta \right] + \frac{1}{2} \tag{7}$$

The term in brackets describes the swing voter in district i, whose characteristics depend on the random event δ. Hence, the vote share itself is a random event, which creates uncertainty when the parties announce their platform. Further, the expected vote share is a smooth function of the difference between the announced policy platforms. The reason is that voters are heterogenous in their preference for the parties and an increase in welfare promised by one of the parties to the voters in i only induces a subset of them to vote for that party. Notice that $\pi_i^L = 1 - \pi_i^R$ so that when choosing the optimal trade policy vector Γ^P the parties face the same optimization problem. Hence, a unique Nash-equilibrium will have parties converging to the same policy platform.

The change in the vote share in district i from an increase in the tariff rate on the product from that district is:

$$\frac{d\pi_i^P}{dt_i} = \alpha_i \frac{dv_i(\Gamma^P)}{dt_i}$$

Fairly intuitively, this shows that a change in the tariff schedule has more effect on the number of votes in a district with a high marginal density α_i. As citizens within a region are identical in their trade policy preferences, the change in the vote share for each group can be inferred from (1).

To sum up the timing of events: in stage one the parties announce their policy platforms with the sole objective to win the election; in stage two nature reveals the nation-wide popularity bias δ; in stage three elections are held and one of the parties wins a majority; in stage four the winning party implements the policy to which it has committed in stage one. Clearly, stages two and four are of little interest, as we assume that the realization of δ is a random event and that there is no commitment problem. In stage three, electoral rules determine how one of the parties obtains a majority. Hence, in the following, we are mainly concerned with finding out how the trade policies that parties announce in stage one are affected by the electoral rule in stage three.

4.1 Proportional elections

In a proportional representation system, the two parties compete for the majority vote share in a national election. The composition of the legislature after the election reflects the nation wide aggregate vote share of each party, and the party with the largest vote share is allowed to implement trade policy. Hence, the objective of party R is to obtain at least 50 percent of the total number of votes. This transforms into a probability of winning:

$$p^P = \underset{\delta}{Prob}\left[\frac{1}{3}\sum_i \pi_i^P > \frac{1}{2}\right]$$

Using the definition of the vote share from (7) and the assumption that $\sum_i \alpha_i \sigma_i^m = 0$, it follows that:

$$p^R = \frac{1}{2} + \frac{1}{3\overline{\alpha}}\sum_i \alpha_i \left[v_i(\Gamma^R) - v_i(\Gamma^L)\right] \tag{8}$$

where $\overline{\alpha} = \sum_i \alpha_i/3$ is the average density.[7] Recall that an increase of the tariff on X_i wins votes in the district where that good is produced and loses votes in the other two districts. Maximizing (8) yields after simplifying using (2a) and (2b)

$$\alpha_i X_i(\tau_i) - \overline{\alpha}\left[X_i(\tau_i) - \tau_i M_i'(\tau_i)\right] = 0 \tag{9}$$

The first term on the left hand side shows the marginal gain in votes when party R offers a higher tariff on good X_i. This increase reflects the marginal increase in the income of the specific factor in that district. The second term shows the marginal loss in the vote share. All voters,

[7] To obtain this result note that the probability that party R wins the election is p^R =Prob$\left[\sum_i \alpha_i \left[v_i(\Gamma^R) - v_i(\Gamma^L)\right] > 3\overline{\alpha}\delta\right]$. Recalling that the lower bound for δ is uniformly distributed on the interval $\left[-\frac{1}{2}, \frac{1}{2}\right]$ equation (8) follows.

including those in the district i dislike tariffs as consumers. Hence, these losses are weighted by the average density $\overline{\alpha}$. It follows that the optimal tariff on X_i offered by party R in a proportional election is:

$$\tau_i^{prop} = \left(\frac{\alpha_i}{\overline{\alpha}} - 1\right) \frac{X_i(\tau_i)}{-M'(\tau_i)} \tag{10}$$

Since district 2 has a higher than average density ($\frac{\alpha_i}{\overline{\alpha}} > 1$), it obtains a positive tariff. The two other products have a zero tariff.[8] Given that the tariff offers of the parties are identical, the nation-wide preference δ determines the election outcome. Hence, in equilibrium both parties win with equal probability.

4.2 Majoritarian elections

In a majoritarian electoral system citizens in each district elect a delegate to represent them in the centralized legislature. In the regional election, each party nominates one candidate. The candidate who obtains more than 50 percent of the vote in a district wins the seat in the legislature. Following Persson and Tabellini (2000), suppose that, due to a strong average ideological preference, party R always wins district 1 and party L always wins district 3. Hence, to win a majority in the legislature, the two parties compete for the swing district 2 only. Clearly, both parties propose zero tariffs on the products from the uncontested districts. The reason is that imposing positive tariffs on the products from these two districts loses votes in the swing district. Consequently, parties maximize their chance of winning by maximizing the probability of winning in district 2:

$$P^R = \underset{\delta}{Prob}\left[\pi_2^R > \frac{1}{2}\right] = \frac{1}{2} + v_2(\Gamma^R) - v_2(\Gamma^L) \tag{11}$$

From the first-order condition it follows that the optimal tariff on the product from the swing districts is:

$$\tau_2^{maj} = 2\frac{X_i(\tau_i)}{-M'(\tau_i)} \tag{12}$$

which is the first-best policy for district 2. When we compare this tariff to that under proportional representation in (10), we see that a majoritarian electoral system results in a higher tariff rate for district 2 if $\alpha_2/\overline{\alpha} - 1 < 2$ which is true for a positive density in district 1 and 2. The

[8] We have assumed that both districts have a lower than average density. However the results below for average tariffs extend to the case where one of the two low density districts in fact has a higher than average density.

reason is that with a majoritarian election the cost incurred by voters in districts 1 and 3 do not enter in the calculations of the parties. Hence, the marginal cost of inducing voters in district 2 to vote for the party candidate is lower, which results in a higher equilibrium tariff.

In addition, as in our model districts 1 and 3 do not obtain a tariff on their product in both electoral systems, the *average* rate of protection is higher in a majoritarian system than in a proportional system. This result extends to the case where more than one district receives protection under a proportional rule. When a second district also has an above average density, its voters count more heavily as consumers for the product from the district with the highest density (as it drives up the average density). Hence, a higher density in one of the other districts increases the tariff for that district but reduces the tariff in the other districts.[9]

4.3 Checks and balances

So far, we have assumed that policy is solely determined by the party that obtains a majority in the legislature. However, the argument that such an electoral system would degenerate in a pork battle between districts is well known and dates back to at least the *Federalist Papers* that already discussed many of the political economy problems related to setting up the US Constitution. For this reason, some countries have introduced presidentialism to offset the adverse effects of majoritarian politics, with the US as a most notable example. For the US, Baldwin (1985) shows that the trade policy objectives of the president are substantially more pro trade than that of Congress.[10]

In our model, the reason why presidentialism would reduce protection in majoritarian systems is quite apparent. As presidential campaigns are

[9] To show this result more formally, start by recognizing that $X(\tau_i)$ is simply marginal profits that are declining in the tariff rate. Hence, when $\tau^p > \tau^m$, the second term on the right hand side of (10) is lower than the second term on the right hand side of (12). Then the statement that proportional rules produce higher average tariff rates can only be true for a country of three district-specific products when:

$$\frac{\left(\frac{\alpha_1}{\overline{\alpha}} - 1\right) + \left(\frac{\alpha_2}{\overline{\alpha}} - 1\right)}{3} > \frac{2}{3}$$

Using the definition $\overline{\alpha} = (\alpha_1 + \alpha_2 + \alpha_3)/3$ this transforms into

$$\frac{\alpha_1 + \alpha_2}{\alpha_1 + \alpha_2 + \alpha_3} > \frac{4}{3}$$

which is never true.

[10] See Destler (1992) for a detailed analysis of the role of the US President in shaping trade policy. Clearly the ability of a president to shape policy depends on the powers delegated to him.

typically two candidate proportional elections, these candidates may run on platforms that offer lower protection to the swing districts, so as not to lose votes in the other regions. The trade policy would then depend on the power distribution between the legislature and the president. Hence, in a strong presidential majoritarian system, there is no reason to expect trade policy to differ significantly from a proportional system. Moreover, when voters act strategically as in Chari et al. (1997) or Besley and Coate (2003), they may anticipate the protectionist tendency in the legislature. In that case, presidential candidates have a stronger incentive to commit to a free trade stance.

Even if a country has a proportional electoral system, a president could reduce the level of protection. This result may arise when the geographical bias for presidential candidates is smaller than that for parties. In the extreme case, when the districts have only a very small difference in ideological bias when it comes to presidential elections, this would result in both candidates running on a free trade platform.

Concluding, when presidents have strong executive powers in determining trade policy, there is no reason to expect a significant protectionist tendency in majoritarian political systems. For the empirical part of the paper, the prediction is that purely majoritarian systems have the highest level of protection, followed my majoritarian systems with a president. However, for strong presidential systems, it is unclear whether the latter system would be more protectionist than a proportional system.

5 Empirical results

Given the outcome of the theoretical model we are interested in the empirical relation between electoral rules and trade policy. Our sample consists of 62 countries, of which 26 have a majoritarian system. For the political economy binary variables on majoritarian systems (Maj) and presidentialism ($Pres$) we have used the database that accompanies Persson and Tabellini (2003). In the data, when we classify $Maj = 0$ this means that a country is classified as a proportional system (Pro) and when $Pres$=0 this means a parliamentary system (Par). We have left out countries that belong to the EU, for these have a common trade policy. One of the consequences of this is that we have only a limited number of OECD countries, of which most have a majoritarian electoral system. For the trade policy data our source is Welch and Wacziarg (2003) for average tariff rates (Tariff) and for Openness (OPEN), which is an updated version of the well-known binary Sachs and Warner score. In addition, we use the Heritage Foundation Index for trade policy (HFD) for the year 1999. HFD is ordered between 1 and 5, where 1 indicates a

free trade and 5 a protectionist regime.[11]

A first glance at the data is already quite revealing. Table 1 shows the correlation between the constitutional variables and trade policy indices. As is apparent, there is a strong positive correlation between majoritarian systems and the tariff level. In addition, when we subdivide into the four possible combinations of electoral rules and presidentialism, majoritarian systems without a president (*MajPar*) has the highest positive correlation with tariffs, whereas proportional systems with and without a president (*ProPres* and *Propar*) have low tariffs. In general, these correlations extend to the other indices of trade policy.

Table 2 shows the OLS and instrumental variables (IV) results for the average tariff rate. Column (1) confirms that majoritarian electoral systems have higher average tariff rates. The effect is economically meaningful, for it indicates that countries with a majoritarian system have on average a 5 percentage point higher tariff. The dummy for presidents is insignificant. However, we see that this result is not very robust for the inclusion of regional dummies. Following Persson and Tabellini (2003), it has been argued that electoral rules are not exogenous but depend very much on history.[12] Hence, to filter out the non-causal effects of electoral rules, in columns (3) and (4) we use instruments to correct for this. We see that instrumenting increases the size of the effect of constitutions. However, again the coefficient of electoral rules has low significance in the regression that includes regional dummies.

Columns (5) and (6) show that the positive correlation between majoritarian systems and tariff protection is mainly driven by countries that have a parliamentary majoritarian system. We also observe that there is no significant difference between proportional systems and presidential majoritarian systems.

In the literature on trade protection, it is well acknowledged that tariff rates imperfectly describe trade protection. To account for this, we check for robustness of the results by using two broader indices of trade barriers. Columns (1) and (2) in Table 3 report the probit results for openness, where the second column treats the *Maj* and *Pres* as endogenous covariates. Again, majoritarian systems increase the chance that a country has a protectionist regime. Table 6-3 reports coefficients, however, we have also calculated that a majoritarian system increases the chance of having a closed trade regime by 33 percent. When we dis-

[11] The average tariff rate of our sample is 12 percent. OPEN includes measures for tariffs, non-tariff barriers, black market premium and export marketing boards. Of the 62 countries (also) 26 have a closed regime. For the HFD score the mean is 2.9.

[12] See Persson and Tabellini (2003) chapter 2 for an in-depth discussion of the methodological issues.

aggregate further, we see that parliamentary majoritarian systems have high trade barriers. We have calculated that *MajPar* raises the chance of having a closed trade regime by 65 percent when compared to the control group. The results for the HFD-score are less conclusive. However, column (5) reveals that also for this index parliamentary majoritarian system are significantly more protectionist.

To conclude this section, we find ample support for our hypothesis that countries with a majoritarian electoral system have on average a higher levels of trade protection. In addition, we find that this effect can for a large part be accounted for by countries that have a parliamentary majoritarian system.

6 Discussion

In this paper we have argued that electoral rules matter for trade policy. In the theoretical part we showed that a majoritarian electoral rule generates higher trade protection when compared to proportional rule. The intuition is that in a proportional election there will be powerful forces against granting trade protection because all citizens matter compared to only those in the swing district with majoritarian rules. In the empirical part of the paper we find support that parliamentary majoritarian electoral systems are correlated with higher trade protection.

Other explanations than the electoral strategies of parties modelled in this paper may account for the positive correlation between a majoritarian electoral rule and protection. First, governments in majoritarian systems may simply use trade policy more than governments in proportional systems, for the latter resort to other means of income redistribution. The reason is that in a proportional system, political parties may want to transfer income to the median voter, for which trade policy is inefficient when compared to other instruments. To take up this point, our model could be extended to include general public goods that may be used for income redistribution. In relation to this, Rodrik (1998) finds that countries that are open to trade have higher government spending. His explanation is that free trade increases the need for social protection. We conjecture that a proportional electoral rule results in a large welfare state (see Persson and Tabellini (2003)) and low protection.

In addition, Bardhan and Mookherjee (2000) argue that lobbying by special interest groups may be more costly in a proportional system, for there are many counterforces that oppose favors to special interest groups. Moreover, Mitra (1999) argues that strong counterforces reduce the incentives for lobby formation, which in turn may result in a lower

level of average protection.[13]

Further, the papers discussed in the introduction argue that for OECD countries majoritarian electoral systems are associated with lower trade protection. In our data we also find some evidence that the effect of the electoral rule is different for OECD countries when compared to the full sample. To speculate on an explanation for this difference, in OECD countries the Stolper-Samuelson effect of protection – i.e. that trade barriers protect labor – may be important. Clearly, the median voter effect then plays a larger role in proportional electoral systems than it does in majoritarian systems, since in the latter local interests are more important. Hence, for capital abundant OECD countries a proportional electoral system may provide more opportunities for labor to obtain protection.

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[13] See Mayer and Li (1994) for an early model on electoral competition, lobbying and trade policy formation .

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Table 1: Correlations between political variables and trade protection.

	Tariff Rate	Openness	HFD Score
Maj	0.33	0.21	0.06
Pres	0.08	0.04	0.19
MajPar	0.27	0.19	0.08
MajPres	0.17	0.10	0.04
ProPres	-0.02	-0.03	0.18
ProPar	-0.35	-0.21	-0.28

Table 2: Results of regression analysis to explain the tariff rate.

	(1)	(2)	(3)	(4)	(5)	(6)
Maj	5.19	3.13	6.66	4.64	-	-
	(1.63)**	(1.80)	(2.76)*	(2.90)		
Pres	-0.22	-1.58	3.76	0.51	-	-
	(1.64)	(1.89)	(3.53)	(5.84)		
MajPar	-	-	-	-	8.41	6.43
					(2.10)**	(2.56)*
MajPres	-	-	-	-	3.99	1.75
					(2.58)	(2.85)
ProPres	-	-	-	-	2.12	1.71
					(1.91)	(2.69)
Regional Dummies	no	yes	no	yes	no	yes
Method	OLS	OLS	IV	IV	OLS	OLS
Adjusted R-squared	0.32	0.36	0.24	0.30	0.37	0.38
Observations	62	62	62	62	62	62

Note: Standard errors in parentheses. Significance indicated at 1 percent (**) and 5 percent (*). Both regressions include a constant and control for income per capita, population size and the OECD dummy. Regional dummies are for Latin America, South East Asia and Africa. Instruments in the two IV regressions are indicators for the date of the constitution and colonial origin.

Table 3: Probit analysis for Openness (Open) and ordered probit for Heritage Foundation score (HFD).

	(1)	(2)	(3)	(4)	(5)
Dependent	Open	Open	Open	HFD	HFD
Maj	0.90	1.26	-	0.20	-
	(0.45)*	(0.69)		(0.30)	
Pres	-0.28	0.19	-	0.04	-
	(0.43)	(0.97)		(0.30)	
MajPar	-	-	1.75	-	0.95
			(0.72)*		(0.42)*
MajPres	-	-	0.23	-	0.10
			(0.78)		(0.50)
Propres	-	-	0.16	-	0.57
			(0.54)		(0.37)
Method	Normal	IV	Normal	Ordered	Ordered
Observations	60	54	60	62	62

Note: standard errors in parentheses. Significance indicated at 1 percent (**) and 5 percent (*). Column (2) treats *Maj* and *Pres* as endogenous regressors (IV), where instruments are the same as those in Table 6-1.