The Common External Tariff in a Customs Union: Voting, Logrolling, and National Government Interests

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Missing from the analysis of customs unions has been a consideration of collective decision-making by countries regarding the union's common trade policy. In the case of the common European external tariff, how governments voted was not public information. This paper uses a unique dataset to derive member states' tariff preferences, which are then used to establish the decision rule before 1987, when individual governments had veto power. Results indicate a principle of unanimity, as well as the presence of logrolling. The political equilibrium for the common external tariff is also illustrated to have shifted as a result of union enlargements.

Keywords: Collective decisions; tariff preferences; political economy; European Community; decisive voter

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1. Introduction

In a customs union, national governments are required to make collective decisions about the common trade policy. In contrast to national trade policy formation, in which voters within countries have rarely had the opportunity to vote directly on national trade, direct voting occurs when countries that are members of a customs union decide on the common external policy. In such instances, and contrary to the case of direct voting by citizens on national trade policy[1] (but as in voting by elected national representatives), opportunities arise for logrolling.[2]

This paper uses the case of the collective determination of the common European external tariff before the 1987 Single European Act (SEA) to study collective decision-making and the role of logrolling in a customs union. Light is also shed on the black box of European collective decision-making, since voting on the common external tariff took place behind closed doors (Schknecht, 1992) in the Council of Ministers[3] (the main decision-making body of the European Community). Because voting in the Council has been hidden from public view an indirect method is required to infer how trade policy preferences (or indeed any policy preference) of national governments have been translated into an equilibrium collective decision.

In order to indirectly examine the collective determination of the common external tariff, I use a unique dataset covering 81 manufacturing industries from 1969 until the adoption of the SEA in 1987 to derive national tariff preferences, which in turn are used to infer the collective decision making rule. The Treaty of Rome (1957) stipulated that decisions on the common

[1] See Mayer (1984).
[2] That is, vote trading can take place. Although trade in competitive markets results in efficient outcomes, logrolling does not necessarily result in Pareto efficiency. For an introduction to logrolling, see Hillman (2003b, chapter 3).
[3] The Council of Ministers is made up of ministers from each member state, with different ministers participating in the Council according to the subject under discussion—for instance, agricultural ministers discuss farm prices in the Agriculture Council, and economic and finance ministers discuss monetary affairs in the ECOFIN Council. Furthermore, each government acts as president of the Council for six months in rotation, thus allowing each country a turn in pursuing its own agenda (European Communities, 1999). And since the EC deals simultaneously in so many areas of policy, it is possible for negotiations to cover a wide variety of topics and thus be subject to logrolling.

external tariff were to be made via qualified-majority voting.[4] However, until the adoption of the 1987 SEA, under the Luxembourg Compromise (Hine, 1985), national governments had the power of veto against proposals deemed to be against their national interest.[5] Along with exploring whether logrolling took place, then, I test whether unanimity was in effect (though unanimity, of course, could be the consequence of logrolling). Since the time period of the study covers three European Community (EC) enlargements,[6] an opportunity is also provided to determine how equilibrium collective policy decisions changed when new countries joined the customs union.

To model the decision-making processes in a political economy framework, a specification is required of the channels of influence over political decisions. In the EC, firms can either lobby their own national governments or the EC as a whole. Throughout the 1970s and 80s, firms mostly lobbied via their national governments, and it was only when countries lost their veto power in the Council that firms began in earnest to set up offices in Brussels with the intent of lobbying other member countries as well (Mazey et al., 1993). Consequently, before the 1987 SEA, the EC had a shallow integration, with little cross-country influence.[7] These facts suggest a two-stage process for a model of collective decisions about tariff-determination. In the first stage, industry interest groups lobby national governments for protection. The national government in response selects a preferred tariff rate to maximize domestic political support based on the political cost of catering to interest group preferences (as in Hillman, 1982, and

[4] Qualified-majority requires about 71 percent of votes cast by all countries to pass a proposal.
[5] A country could vote against a proposal without it being a veto. The Single European Act did not abolish the power of veto, but rather suspended its use.
[6] In 1973, the UK, Ireland, and Denmark joined the founding members, France, Germany, Belgium, Italy, Luxembourg, and the Netherlands; in 1981, Greece became a member; and in 1986, Spain and Portugal were admitted.
[7] In the case of shallow integration, a customs union's common external tariff reflects bargaining between member countries, and hence can be thought of as a Common Market, rather than a full economic union, as would be the case under deep integration (Cadot et al., 1999).

subsequent political economy specifications of decision-maker objectives). In the second stage, national governments vote in the Council to determine the equilibrium common external tariff, which is the duty preferred by the pivotal national government.

The identity of the decisive national government depends on how decisions are made. One hypothesis is the unanimity that could have been achieved through logrolling. An alternative hypothesis is that some other voting rule was used. Since tariffs were declining over time during this period as a result of GATT[8] trade rounds, proposals before the Council would have been to adopt a common external tariff that was lower than the status quo. With the unanimity rule of the Luxembourg Compromise, then, the decisive national government would have been that favoring the highest tariff, since that is the government that needed to be convinced to accept lower tariffs. For a qualified-majority rule, the pivotal national government would be the one whose preferences lied at the 71st percentile of the distribution of tariff preferences. With majority voting, the decisive national government would be the median voter. And for any voting rule, logrolling could have affected the collective decision.

In considering logrolling, I take an intuitive approach that is novel to the literature. Logrolling allows national governments with a strong political interest in protecting politically important or sensitive domestic industries to accept a higher tariff on goods that are of less political importance, in order to obtain high tariffs for the politically important industries.[9] In other words, if the decision rule required to pass a proposal is simple majority and proposals are to lower the tariff, for instance, the observed duty will actually be higher than if logrolling had not taken place. This is because the duty will reflect the preferences of a decisive country that

[8] General Agreement on Tariffs and Trade, which has been superseded by the WTO (World Trade Organization).
[9] Previous empirical research on logrolling has focused on the U.S. Congress. See Stratmann (1997) for a survey of the literature. Previous studies on voting on trade policy have also concentrated on the U.S., where the actual vote is observed. See, for instance, Baldwin and Magee (2000).

favors a higher tariff than the one whose preferences lie at the median of the distribution. Similarly, if logrolling occurs on a proposal requiring qualified-majority to pass a decrease in the tariff, the decisive country's preferred common external tariff (and hence the observed tariff) will lie at a percentile higher than the 71st percentile.

As an identification mechanism for testing the unanimity rule against possible alternatives, I use the member enlargements that occurred since the adoption of the common external tariff. Because the composition of members changes over time as new countries join, there is potential for the political equilibrium to change, possibly in favor of a newer member,[10] thus providing for an additional source of variation in the data. To identify the pivotal country under each voting rule, and to determine whether logrolling took place, I derive each country's preferred common external tariff level from each country's pre-EC tariff rate. The decisive national government, then, is that whose preferred tariff rate lies at the appropriate percentile.

The empirical results support the hypothesis of unanimity as the collective decision rule. The decisive national government is found to indeed be the one that prefers the highest tariff. This outcome is also consistent with logrolling. The results are robust to various sensitivity tests, including using alternative methods for identifying the pivotal member country. Furthermore, when examining how or if the political equilibrium changed over the years, the results suggest that the decisive country in some cases changed due to an enlargement, and that changes in the distribution of preferences do appear to have shifted the equilibrium.

The paper proceeds as follows: section 2 presents the empirical strategy for determining which political-economy model best explains tariff rates. Section 3 describes the data, while

[10] A question that might be raised is whether the enlargements themselves are endogenous; in other words, whether countries join the EC because of trade considerations. Given, however, that the major impetus behind integration has been a desire to maintain stability in Europe, and that political, rather than trade issues have been the reason behind each accession, it is unlikely the enlargements are endogenous (European Commission, 2002).

section 4 provides the empirical results and subjects them to a variety of sensitivity tests, while section 5 examines how the decisive country has changed over time. The final section summarizes the conclusions.

2. Empirical Strategy

2.1. Stage One: Interest Groups Lobby National Governments

In stage one, standard political economy considerations establish the policy preferences of the national governments (Hillman, 1982; Hillman and Ursprung, 1988; Grossman and Helpman, 1994).[11] Since no assumptions are required about the means and type of lobbying that occurs in the EC, nor that groups that lobby are necessarily perfectly organized and seek to influence the entire structure of tariff rates, a general specification is used to motivate the empirical model. More specifically, I view tariff-setting governments in each country as choosing industry tariff rates that result in a politically-optimal industry deviation from efficient free trade that is in the public interest. With p_{it} the relative price of industry $i = 1,\ldots,n$ at time *t*; p_{it}^* the world price of that industry's good (so that $p_{it} - p_{it}^* = t_{it}$, the tariff rate on good *i* at time *t*), and $\pi_{it}(\cdot)$ indicating the profit function for the industry, a national government's political support function is

$$PS_{it} = f\left(\pi(p_{it}) - \pi(p_{it}^*), p_{it} - p_{it}^*\right) \tag{1}$$

where the first argument indicates the gain in industry profits or rents, and the second term represents the loss in consumer welfare from the tariff. The determination of the preferred common external tariff for an industry therefore involves the interests of the industry through profits or rents; of domestic consumers of the commodity who seek to maximize their utility; and

[11] See Goldberg and Maggi (1999) and Gawande and Bandyopadhyay (2000) for empirical applications of the Grossman-Helpman model.

of the national government, which trades off industry and consumer interests to maximize political support.

Empirically, to identify where countries rank in their preferences, the political support function needs to be defined first. Because the focus of this paper is not on explaining the observed structure of protection across industries, but rather on shedding light on how collective decisions on the European common external tariff are made, the structure of the political support function comes not from a formal model, but rather from previous empirical studies (see Rodrik, 1995, for instance). In particular, the literature predicts that protection is higher:

• The larger the industry: the larger the industry seeking protection, measured as the share of employment in the industry, the greater is the incentive to be involved in the tariff-setting process. Furthermore, a large share of employment means the industry has more labor votes, which again increase protection. On the other hand, more employees makes it harder to organize as a result of the free rider problem, which in turn may decrease protection (Trefler, 1993).

• The smaller the number of firms: a smaller number of firms alleviates the free rider problem in coordinating a lobby, thus increasing the level of protection. Many studies, however, find a positive, rather than a negative, effect. Hillman (1991) and Hillman et al. (2001), for instance, view lobbying as a case of private provision of a public good, since when successful, there is a public good-type benefit—increased protection—to all firms in the industry. A larger contribution by one firm does not necessarily decrease the contribution of other firms. As a result, increasing the number of firms in an industry can either increase or decrease the overall lobbying effort. [12]

[12] Pecorino (1998) analyzes this issue in a repeated tariff lobbying game where cooperation may be maintained through the use of trigger strategies, so that the difficulty of maintaining cooperation is measured by the critical value of the discount parameter. He finds that the effect of an increase in the number of firms on the ability of maintaining cooperation is indeterminate.

• The lower the wage: disadvantaged industries often receive more protection. An industry is disadvantaged if it is a low-skill, and hence low-wage industry (see Trefler, 1993).

• The higher its labor intensity: the more labor intensive an industry, the more labor votes it has. This is measured by the labor cost share in production.

• The lower the level of intra-industry trade: industries seeking protection will find their task harder if they must counter not only consumer dissatisfaction, but also producers who purchase their goods as intermediates (see Marvel and Ray, 1987).

• The higher the import penetration: the higher the import penetration, the more will the affected industry lobby for protection, so as to decrease competition and maintain its market share (Trefler 1993). The theoretical literature, however, predicts an ambiguous relationship. In particular, the Grossman-Helpman (1994) model predicts that if industries are perfectly organized, protection should be higher in industries with low import penetration, and if they are not organized, the relationship between protection and import penetration should be positive. Models predicting a negative relationship include Mayer (1984), Hillman (1982), and Findlay and Wellisz (1982). Another problem with this variable is its potential endogeneity, since a higher tariff can lower import penetration. This will be dealt with in section 5.

• The greater the rise in import penetration: declining sectors (those with large increases in import penetration) tend to receive more protection so as to reduce adjustment costs (Olarreaga et al., 1999).

• The smaller the share of exports in production: export-oriented industries do not require protection either because they face no import competition or because, with intra-industry trade, protection will provoke unwanted foreign retaliation (Trefler, 1993).

A dummy is also included to control for the Tokyo trade round, which occurred around the same time as the first enlargement.[13] This is predicted to have a negative relationship with tariffs, since each GATT round resulted in multilateral tariff reductions. I use the trade round dummy rather than year fixed-effects because it generates a clear prediction.[14]

To estimate each government's preferred industry tariff rate, I use each country's tariff rate from 1958, which is before a common tariff was established. This allows me to determine the relationship between each country's tariff and the various components of its political support function. The equation estimated is:

$$t_{ic} = \beta_1 + \beta_2 C_{ic} + \nu_i + \varepsilon_{ic} \qquad (2)$$

where t_{ic} is the 1958 tariff rate for industry *i* and country *c*; C_{ic} is the vector of characteristics for industry *i* and country *c*;[15] ν_i is an industry-specific fixed effect, which is included to account for any unobserved factors that are common to all countries but vary by industry; and ε_{ic} is the error term. Results are shown in Table 1.

The coefficients from the estimation of equation (2) are then used to predict each country's preferred tariff over time, based on industry data from 1969 to 1987. Here it is assumed that the *function* determining each member government's preferred tariff does not change. It is possible, and highly likely, that this function may in fact change over time as new governments with different ideologies assume power in each country. Although it would be possible to control for whether a country's right wing party or left wing party is in office, it is not clear that it would play a major role in the determination of preferred tariff rates. For instance, in

[13] The Tokyo Round began following the accession of the UK, Ireland, and Denmark in 1973, and concluded in 1979.
[14] I also run the regressions with time fixed effects to see if that choice affected the results.
[15] Comparable industry data are not available for 1958. As a result, I used 1963 trade data together with 1963 industry data for Belgium, Germany, France, Italy, and the Netherlands, and 1976 data for the UK and Ireland. Using solely the available 1963 data does not alter the conclusions.

the U.S., Republicans favored high tariffs until the Great Depression and opposed them subsequently; the converse holds for Democrats. But in any case, the predicted preferred tariff rates are only used to rank order the countries in preferred tariff rates, not for estimation purposes. To check for robustness of the results, however, other methods for determining the decisive country are used. More details are given in section 4.

2.2. Stage Two: Voting in the Council of Ministers

In the second stage, each minister of a member country arrives at the relevant Council meeting with his or her national government's preferred tariff rate, as determined through expression (1) in the first stage. An industry in one country cannot at this point seek to influence a government in another country.[16] That is, an industry in France can only affect France's preferred tariff rate, not the preferred rate of Germany or Belgium. France's representative may, however, exchange votes for a preferred trade policy with Germany or Belgium's representative, so that voting may be affected by logrolling. Deliberations ensue and a vote is conducted to determine the common external tariff for the industry. The resulting tariff rate will be the duty preferred by the decisive national government.

Which country is decisive in turn depends on how decisions are made. If the decision rule is unanimity, as the right of veto under the Luxembourg Compromise implies, the observed tariff rate will reflect the preference of the country with the most extreme preference. In other words, in the case of proposals to lower the tariff rate, the country favoring the highest tariff will be decisive, since this government needs to be convinced to lower the tariff.

[16] This assumption is consistent with the fact that firms during this period mostly lobbied their national governments (Mazey et al., 1993).

Under a qualified-majority rule, 5/7 of the votes in the Council are required to approve a proposal. This means that the decisive national government will be the one whose preferred tariff rate lies at the 71st percentile of the tariff distribution, assuming the proposal is to lower tariffs. This is because if there are 7 member states, for instance, the country that is most likely to object to a change in the tariff rate is the one with the most extreme position among the 5 that are needed to pass the proposal. Finally, if decisions are made using simple majority, the observed tariff will reflect the preferences of the median country.

However, given the opportunities that countries have at this stage to bargain and exchange votes for preferred tariff policies, tariff determination can also reflect logrolling. With decisions in the Council not directly observed, we need an indirect method to determine whether logrolling took place, and therefore whether intensity of preferences was taken into account in collective decision-making.

A logrolling situation exists if two issues are adopted as a package even though they would not pass separately. This occurs when there is an unequal intensity of preferences. If one member state feels very strongly about protecting some key domestic industry but not about protecting the key domestic industry of another member state, the countries will have an incentive to trade votes with one another. For example, if Portugal has a strong preference for protecting its footwear industry, but is not concerned about the automobile industry, while Germany really wants to protect its automobile industry, but has no strong preference for the footwear industry, they have an incentive to trade votes. Portugal will agree to vote for the increased tariff in the sector Germany cares about, in exchange for Germany's support in protecting the sector that Portugal cares about.[17] The special interests in Germany are better off

[17] Note that given how decisions are made in the EC, France could also vote for a higher tariff in the sector Germany cares about in exchange for a vote for increased agricultural subsidies, for instance.

with the high tariffs on each sector than with low tariffs on both products. The special interests in the logrolling partner Portugal are similarly better off with the combined high tariffs.

The outcome under logrolling, then, will be different than if logrolling had not taken place. More specifically, once the different intensities of preferences are taken into account, the observed common external tariff will be different, and thus reflect the preferences of a different pivotal government than if logrolling had not taken place. If the decision rule is simple majority,[18] the outcome under logrolling will reflect the preferences of a more protectionist country than the median, such as the one at the 60th percentile of the distribution. This is because the observed tariff rate will be higher than if there were no vote trading, meaning either that a decrease in tariff was blocked or that the tariff decreased by less than it would have otherwise. The same is true under qualified majority. With logrolling, the decisive national government will now be the one whose tariff preferences lie at a higher percentile than the 71st, such as the 86th percentile.[19]

The estimated equation, then, is given by

$$t_{it} = \beta_1 + \beta_2 C_{it}^d + \beta_3 T_t + \nu_i + \varepsilon_{it} \qquad (3)$$

where t_{it} is the common external tariff for industry *i* at time *t;* C_{it}^d is the vector of the decisive country *d*'s characteristics for industry *i* and time *t*; T_t is a dummy indicating the conclusion of the Tokyo Round (equal to 1 starting in 1979); ν_i is the industry-specific fixed effect, which is included to account for any time-invariant unobserved factors; and ε_{it} is the error term. In other words, the observed common external tariff will reflect the political-economy characteristics of

[18] When voting for the common external tariff, simple majority is not allowed. It is included here, however, as a reference and as a check on the results.

[19] I use the 86th percentile because it lies between the 71st and the 100th percentile that is implied by unanimity. Given that the number of member states included in the analysis varies from 5 to 11, the choice of the 86th percentile also allows me to capture the national government whose preference lies between the 71st and the 100th percentiles (the same is true for the 60th percentile).

the decisive national government. One equation is estimated for each decision rule. As in Romer and Rosenthal (1982), the criterion for selecting which model best describes tariffs is the R-squared. As alternatives to the decisive-country hypothesis, two additional specifications are included: one in which country's industry characteristics are aggregated and another in which they are averaged. Furthermore, a specification where the decisive country is the one preferring the lowest tariff is also included to ensure the credibility of the results, as it would suggest that proposals were to increase the tariff, which is unlikely given GATT commitments.. Finally, two specifications of (3) are estimated to take into account the possibility that national government's preferences may be weighted equally or differently according to the number of votes a country has in the Council (Table 2).[20]

3. Data

3.1. Tariffs

Tariffs for 1958 were taken from *Tariffs and Trade in Western Europe*, and needed to be converted from the Brussels Tariff Nomenclature (BTN) into the 3-digit industry classification (NACE). The sample includes data for 81 industries and seven member countries.[21]

Tariff rates for the EC were obtained from various issues of the *Official Journal of the European Communities* (which publishes the common tariff schedule annually). Import duties are expressed in three ways: as *ad valorem* tariffs equal to a percentage of the product's value; as specific tariffs per unit weight, volume, or number of pieces; or as a combination of the two. In all cases, tariffs are based on the CIF value (cost, insurance, freight). Duties are expressed as

[20] Votes in the Council are weighted. The unweighted alternative is included, however, to account for the fact that it is the European Commission that drafts proposals and negotiates treaties. It also serves as a check to see whether decisions are made at the Council or at the Commission-level.
[21] The countries are Belgium, Denmark, France, Germany, Italy, Netherlands, and the UK.

conventional duties,[22] and only the *ad valorem* duties are used. In some instances, the duties were expressed as a combination of *ad valorem* and specific tariffs. As a result, the 16 affected industries were dropped from the sample.[23] Data were collected for every other year, beginning with 1969.[24] Details on assembly are provided in the Appendix.

3.2. Industry and Trade

Industry data for 1976-87 come from Eurostat's *Structure and Activity of Industry: Annual Inquiry, Main Results.* This publication covers all enterprises in industries employing 20 or more persons (with the exception of Spain and Portugal, which contain data for all enterprises). The data were collected for the publication year, rather than the year tariffs entered into force; this was done because the publication year more closely reflected the time when the decision was made. Industry data for 1963 were obtained from Eurostat's *Études et enquêtes statistiques*, from 1969. Data on exports and imports for the 1976-87 period come from Eurostat's *EEC External Trade (Nimexe) 1976-87*, Supplement 2. Data for 1963 and 1969-75 were obtained from Feenstra et al. (2005).

4. Results

Results are shown in Table 3 for the unweighted specification, and Table 4 for the weighted specification. All regressions include a full set of industry-specific fixed effects. Standard errors are both heteroskedasticity and autocorrelation-consistent. The results indicate

[22] Conventional duties are duties that are applicable to imported goods originating in countries which are contracting parties to the GATT, or with which the EC has concluded agreements containing the most-favored nation tariff.
[23] I experimented with including those industries by using only the ad valorem part of the tariff rate and obtained the same results.
[24] It was decided to start with the 1969 issue, rather than the 1968 (which marked the beginning of the Common Customs Tariff) because there was no tariff schedule published in 1970.

that the second unanimity model (in which the decisive country is the one preferring the highest tariff) performs best, as it has the highest R-squared. The results also suggest that the share of employment, the number of firms, the change in import penetration, and the Tokyo Round dummy are significant in explaining tariff rates and had the expected signs, providing further support to this model. The wage was also significant, but had a positive, rather than the expected negative effect on the tariff. These results then provide strong evidence in favor of the hypothesis that before the 1987 Single European Act, the decisive national government was the one favoring the highest tariff.

4.1. Sensitivity Analysis

Comparing models on the basis of their R-squared is not the only way of deciding which one best explains the variable of interest. Because the estimated equations are OLS regressions, and each estimated equation contains the same number of regressors and the dependent variable is the same, the R-squared is an appropriate measure for comparing the different models.[25] To further test the robustness of the results, though, I perform J-tests of the second unanimity specification against all the other possible decision rules. The J-test, as proposed by Davidson and MacKinnon (1981), is a procedure for choosing between non-nested models. The J-test, then, can be used to see if the model that had the highest R-squared does in fact have a greater explanatory power than the alternatives, but it has the disadvantage that oftentimes it is impossible to make a selection between models. In particular, in a finite sample, the test of the H_0 versus H_1 can lead to four possibilities: reject both, neither, or either one of the two hypotheses (Greene 1997). Another disadvantage is that it is a weak test, and hence one cannot obtain a ranking of models, as one does with the R-squared.

[25] Using the Akaike Information Criterion, or the Schwarz Criterion will lead to the same conclusion in this case.

The results, shown in Table 5, indicate that this is indeed the case. The second unanimity rule (highest preferred tariff) rejects all specifications, but it is also rejected by the other models. The t-statistic when it is the alternative hypothesis is always higher than when it is the null, which gives some support to the finding that the second unanimity model performs better in explaining tariff rates.

Another potential source of concern is the fact that some of the variables used as indicators of political influence present a potential endogeneity problem. For instance, the higher the tariff, the less will domestic consumers buy of imported goods, resulting in a decrease in imports altogether. It would be desirable to consider the joint determination of import penetration levels with tariff protection and perform a simultaneous estimation of the two equations, as in Trefler (1993). Due to data restrictions, however, such an approach is not possible.[26] The first column in Tables 6 and 7, though, present the R-squareds from running the same regressions as before, only this time without the import penetration variables. What is found is that the results do not change in either specification.

Now, one problem that has been pointed out repeatedly in the literature concerns the use of import shares as weights when aggregating tariffs to the industry level. As a result, this paper uses a simple rather than a weighted average, but to ensure that this choice did not affect the results, I experimented with using the import shares as weights and re-ran the regressions to determine whether the choice of weights had any impact on the results. As indicated in the second column of Tables 6 and 7, the second unanimity model still fits best in both specifications. This suggests that the results are robust to the choice of a weighting scheme.

[26] Trefler estimates a simultaneous equation Tobit model, with one equation with non-tariff barriers and another with import penetration as the dependent variable. The explanatory variables used in the import penetration equation are measures of factor endowments, which are not available for the EC at a detailed enough level and for the period in question.

Furthermore, since the industry and trade data for 1976 were used to represent the characteristics for the 1969-75 period, it is possible that these results might be subject to measurement error. To investigate this, the same regressions were run, only now restricting the sample to 1977-87. The results are shown in the third column of Tables 6 and 7. Again, the model in which the pivotal country is the one favoring the highest tariff performs best.

Another possible concern that might arise regards the use of a Tokyo Round dummy instead of time fixed-effects. To investigate whether this choice affected the results obtained, I re-ran all regressions, only this time including time dummies in place of the Tokyo Round dummy. As shown in column 4 of Tables 6 and 7, the second unanimity specification did still perform better than all the other specifications.

Finally, columns 5 and 6 of Tables 6 and 7 present the results of regressions using different functional forms. In column 6, none of the variables are in logs; whereas in column 7, only the dependent variable is not in logs. The conclusions drawn are insensitive to this change in functional form.

4.2. Revisiting the Decisive Country

A final possible concern that might be raised consists of how the decisive country is determined in the first place. In particular, an assumption was made that the function that determines tariff rates in 1958 is unchanged over time. To ensure that the results are not affected by this assumption, two additional methods are used to identify the decisive country.

In the first case, the industry characteristics included are those lying at the relevant percentile. For example, if the voting rule is qualified-majority, the decisive country is the one whose industry characteristics lie at the 71^{st} percentile. The percentile used can be ascending or

descending, depending on the sign prediction. From section 2, it was predicted that the share of employment in the country, the labor intensity, the import penetration and the change in import penetration were all positively related to the tariff rates, whereas the number of firms and the export intensity were anticipated to exhibit a negative relationship. For those with the positive relation, the percentile is, for example, the 60^{th}; but for those showing a negative relationship, the appropriate percentile is the 40^{th} rather than the 60^{th}. Results are shown in Tables 8 and 9 for the unweighted and weighted specification, respectively. They indicate that the unanimity model in which the country favoring the highest tariff is pivotal still has the best fit. It is also seen that the share of employment, the number of firms, the change in import penetration, and the Tokyo Round dummy are all significant and of the same sign as when the decisive country was derived from predicting preferred tariffs. The wage rate, however, is again found to have a positive rather than the predicted negative relationship to the tariff rate. A further result is that the labor cost share is now significant and of the expected sign.

This methodology, however, has a drawback. If one were to count the number of times that a country's industry characteristics matched the appropriate percentile in the distribution, and do it for every industry characteristic, one will most likely find an inconsistent decisive country. For example, it is possible that according to this methodology, the decisive country according to the share of employment is Italy, while France was the decisive country in the number of firms and wage rate, Germany in labor intensity and import penetration, and Belgium in the change in import penetration and export intensity. This, then, results in an inconsistent result, in that there are four potential decisive countries. To circumvent this problem, simple bivariate OLS regressions are run to determine which of the industry characteristics were the most influential in affecting tariffs. The decisive country is then the one whose most influential

characteristic lies at the relevant percentile. The results for both the unweighted and the vote-weighted cases are shown in Tables 10 and 11. Again, the model where the decisive country is the one favoring the highest tariff is preferred, with the number of firms, and the Tokyo Round dummy being significant and of the expected sign as before. Once more, however, the wage rate has the opposite relationship than what was predicted. Furthermore, the intra-industry index and the export share are now also significant and of the expected sign. These results then provide further support for the finding that from 1969 to 1987, decisions regarding the common external tariff were made unanimously, with possible logrolling involved.

5. Examining Changes in the Decisive National Government

The final objective consists of exploring how the distribution of countries has shifted over time for the original set of member countries, and where the new member countries came into the distribution, so as to determine whether changes in the decisive national government were due to shifts in the distribution or to the enlargements. The results presented in Table 10 rank countries on the basis of their preferred tariff rates in the textile industry. [27] The focus is on the years before and after each enlargement, so as to illustrate its impact on the decisive country.

According to the results, the first enlargement in 1973 did not cause a change in the decisive country, but both in 1981 and 1987, a new member became pivotal, with Greece in 1981 and Portugal in 1987. There is also an instance where the position of governments in the

[27] This industry was selected because it is one of the sectors where protection plays a large role in the industry's strategy, so much so that it has become a very powerful lobby, seeking to curb competition from low wage countries, which it feels can destroy the industry in the EC. Indeed, lobbying was decisive in the renewal of the Multi-Fiber Agreement in 1977, where, due to France's introduction of quotas on textiles and clothing in violation of the Community's rules, as well as indications that other members might follow suit, the EC increased barriers to imports (Hine 1985). The industry represents about 10 percent of companies in the EC, and employs over 2.3 million people. The EC is the world's second largest exporter of textiles and clothing products, and the largest exporter of textiles (DG Trade 2001). This sector has the heaviest concentration of employment in Lombardy (Italy), Catalunya (Spain), Bavaria and Nordrhein-Westfalen (Germany), Norte (Portugal), Wallonie (Belgium), and Région du Nord (France) (WTO 1998).

distribution shifted, with the shifts causing a change in the equilibrium. In particular, in 1979, France favored the highest tariff, thus replacing Italy as the pivotal country. These results provide evidence that shifts in the pivotal country may have occurred due to the entry of new countries at the top of the distribution, as well as to movements along the distribution.

6. Conclusions

Missing from the study of customs unions has been the determination by national governments of the common external trade policy. The most prominent and successful customs union has been that of Europe. I have used a unique dataset to derive politically motivated national tariff preferences in the EC, which have been applied to investigating collective decisions about the common external tariff before the Single European Act. How each government votes in the Council has not been public information and so has not been observable. I therefore sought to infer the decision rule that translates national governments' preferences influenced by special interests into an equilibrium common external tariff. A novel approach has been to regard logrolling as another decision rule that allows intensity of preferences to be taken into account in decision-making. The variation resulting from countries joining the EC has been used to identify the collective decision rule and determine whether logrolling took place.

The empirical test consisted of regressing the preference-determining characteristics of the decisive national government (for each decision rule) against the common external tariff level for 81 manufacturing industries over the 1969-87 period. As expected, the rule that best explained tariffs was found to be unanimity, with the pivotal country being the one favoring the highest tariff. Again, because logrolling allows for countries to misrepresent their tariff preferences, unanimity also implies logrolling. If countries were voting according to the qualified

majority rule, and proposals are to increase the tariff, the decisive national government would be the one whose preferred tariff lies at the 71st percentile of the distribution. With logrolling, however, the decisive national government's preference lies at a lower percentile, since one national government is voting against a tariff decrease (or in favor of a tariff increase) for one industry in exchange for a similar vote for another industry of greater political importance. These results were robust to a variety of sensitivity tests.

The countries' derived common external tariff preferences allowed for conclusions to be made about how the decisive country changed over time, and whether the changes were due to shifts in the distribution of national government's preferences, or to the enlargements. The results for the politically sensitive or influential textile industry provide evidence of shifts in the political equilibrium due to the entry of new countries at the top of the distribution, as well as to movements along the distribution.

Now, because countries had veto power and the common external tariff, though trending downwards as a result of GATT trade rounds, did not change much throughout the period, it would seem reasonable that decisions were made unanimously, with the pivotal country being the one favoring the highest tariff. Furthermore, throughout the analysis, specifications using the sum and the mean of countries' characteristics were also estimated as a test of this decisive-country model, along with one where the pivotal country was the one preferring the lowest tariff, but none of them had a better explanatory power. These findings then provide strong support for the decisive country framework used to describe how decisions were made in the EC before the ability to veto was suspended.

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8. Appendix—Dataset Construction

8.1. Tariffs

Tariff rates before 1987 are classified in the Brussels Tariff Nomenclature (BTN), which needed to be converted to the 3-digit level of the EC's Industrial Classification, named NACE,[28] in order to match the industry data. A concordance table between the 6-digit Nimexe[29] and the 3-digit NACE, from Jon Haveman's Industry Concordances web site,[30] was used. Nimexe is closely related to the BTN, in that it corresponds exactly at the 4-digit level. In order to determine the 6-digit equivalent, the description of the Nimexe category was compared to the description of the BTN subdivisions until a match was made.

Some of the NACE categories corresponded to only one Nimexe, but in most cases, there were several Nimexe that made up one NACE industry. Rather than averaging all the corresponding tariff rates, which would have made it difficult to accurately reflect the size of changes in the level of protection, it was decided to use only the products that accounted for at least 10 percent of the trade in an industry. For the industries where no product met that threshold, or for those where all the products meeting that threshold, taken together, did not account for at least 50 percent of the trade, I included all the products with the highest trade share which, when taken together, met the 50 percent threshold. For many NACE industries, however, more than one product was used to represent the industry. In this case, the tariff rates were aggregated using a simple average.[31]

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[28] General Industrial Classification of Economic Activities within the European Comminutes.
[29] Nomenclature of Goods for the External Trade of the Community and Statistics of Trade between Member States.
[30] http://www.macalester.edu/research/economics/PAGE/HAVEMAN/Trade.Resources/TradeConcordances.html
[31] To check for the robustness of the results, I also ran regressions using the import-weighted tariff. The simple average was used because using import shares as weights when aggregating tariffs to the industry level can potentially cause a low weight to be attached to products that face high tariffs, since those goods are likely to have low imports for reasons stated above. Lee and Swagel (1995) construct average tariffs using import and production shares as weights. Production shares, however, tend to overstate protection, much in the same way that import shares understate them.

Tariff data for 1987 were in the Combined Nomenclature (CN), which, again, needed to be converted to the 3-digit level of NACE. The correspondence table between the two classifications was taken from Eurostat's *Intra- and Extra-EU Trade (Combined Nomenclature)*, Supplement 2. As before, some of the NACE classes corresponded to only one CN category, but in most cases, there were several CN categories that made up one NACE industry. As a result, the same procedure outlined above was used.

8.2. Industry and Trade

Because the industry data contained missing observations, it was necessary to linearly interpolate the missing values using the previous and next year's data. This was not always possible, since there were instances where only the previous or the following year's was available (but not both). In those cases, the data from the closest year were used to fill in what was missing. A criterion was also established to determine whether an industry should be kept or dropped for lack of data. As long as there were at least five out of the total possible 11 countries available,[32] and sufficient years for interpolation to be used; and as long as data on all variables were available, the industry was kept. Observations were also dropped whenever the reported values were combined with that of another industry for reasons of confidentiality. In the end, out of 124 3-digit NACE industries, 80 were included. The 3-digit level was selected because that was the most detailed available. Data from 1963 were in the previous industry classification, named NICE. These were converted in NACE categories using the concordance from the Université Catholique de Louvain's Département des sciences économiques website.[33] Since no

[32] I omit Luxembourg because its industry data is sparse, the trade values are not provided for Belgium and Luxembourg separately, and because the two countries were already a customs union before they joined the EC.
[33] http://www.econ.ucl.ac.be/ECON/FR/SERVICES/LOGISTIQUE/NOMENCLATURES/CONCORDANCES/nacectci.html.

industry data were available from 1969 to 1975, the values were linearly interpolated from 1963 to 1976, when both years were available. In cases where there were no 1963 observations, the 1976 data was also used for the 1969-75 period, under the assumption that these characteristics had not changed much over that period.[34]

Data on firms employing less than 20 persons are available in 5-year intervals, though not for all country-industry pairs. Only in 1983 do the data refer to firms employing 1 to 19 persons (in 1978 and 1989, the data are only for firms employing 10 to 19 persons).[35] A correction was then performed using this data.

Trade data from 1976-87 were aggregated from the 6-digit Nimexe into the 3-digit NACE.[36] Data for the earlier period were converted from SITC revision 2 to NACE.

[34] Magee and Lee (2001) refer to a 10-year period for industry adjustment.
[35] Not performing the correction does not alter the conclusions drawn. To further check for robustness, I also run regressions omitting all trade-related explanatory variables. See Section 4 for details.
[36] Another issue was that trade data for Belgium referred to both Belgium and Luxembourg. To separate Belgium's share, I used the share of population in Belgium to adjust the data.

Table 1. Determining Preferred Tariff Rates

Dependent variable: ln(1+ common external tariff) (simple average)	
Employment Share	-0.210***
	(0.062)
# Firms	-0.016
	(0.027)
Wage	-0.562***
	(0.101)
Labor Cost Share	-0.094
	(0.231)
Intra-industry Ratio	0.134**
	(0.064)
Import Penetration	-0.124
	(0.080)
Export Share	-0.152**
	(0.075)
Obs	449
Adjusted R-squared	0.6092
F-statistic	15.19

Note: Panel regressions were run for 7 countries (Belgium, France, Germany, Ireland, Italy, the Netherlands, and the UK) and 81 industries. Industry and trade data are from 1963 and 1976, while the tariff is from 1958. Heteroskedasticity-consistent standard errors are in parenthesis. Estimates marked *** are significant at the 1-percent level; those marked ** are significant at the 5-percent level; and those marked * are significant at the 10-percent level. All variables are in logs. The estimated equations also include a full set of industry dummies, as well as a constant. The relationship between the 1958 country-specific tariffs and the industry characteristics were used to forecast each national government's preferred tariff rates over the 1969-1987.

Table 2. Distribution of Votes in Council of Ministers

Country	Number of Votes (EC-6)	Number of Votes (EC-9, EC-10, EC-12)
Belgium, Netherlands	2	5
Denmark, Ireland		3
France, Germany, Italy	4	10
Greece, Portugal		5
Luxembourg	1	2
Spain		8
UK		10

Source: European Communities (1999).
Note: EC-6 refers to the EC before the first enlargement in 1973. EC-9 refers to the EC following the first enlargement, EC-10 denotes the EC after the second enlargement in 1981, and EC-12 indicates the EC following the third enlargement in 1986.

Table 3. Unweighted Regressions Explaining Common External Tariff

	Unanimity 1	Median	Logrolling 1	QMV	Logrolling 2	Unanimity 2	Sum	Mean
Employment	-0.009	0.004	-0.010	-0.027*	-0.009	-0.025**	-0.036	-0.033
Share	(0.015)	(0.016)	(0.018)	(0.015)	(0.017)	(0.011)	(0.040)	(0.035)
# Firms	0.016***	0.013***	0.019***	0.028***	0.034***	0.049***	0.009	0.076***
	(0.005)	(0.005)	(0.005)	(0.010)	(0.006)	(0.006)	(0.016)	(0.013)
Wage	-0.027	-0.009	0.008	0.047	0.029*	0.070***	-0.029	0.061**
	(0.021)	(0.024)	(0.025)	(0.031)	(0.016)	(0.021)	(0.036)	(0.029)
Labor Cost	0.107***	0.001	0.032	0.025	-0.008	-0.033	0.077	0.161***
Share	(0.028)	(0.027)	(0.036)	(0.050)	(0.025)	(0.029)	(0.076)	(0.062)
Intra-industry	-0.038***	-0.013	0.001	-0.007	0.007	-0.017	-0.042**	-0.057*
Ratio	(0.013)	(0.009)	(0.010)	(0.012)	(0.009)	(0.013)	(0.020)	(0.031)
Import	0.008	-0.003	-0.010	-0.029**	-0.035***	-0.008	-0.015	-0.012
Penetration	(0.014)	(0.012)	(0.012)	(0.015)	(0.012)	(0.014)	(0.020)	(0.018)
Δ Import	0.0002	0.001**	0.002***	0.003***	0.001	0.002**	0.001***	0.002**
Penetration	(0.0001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Export Share	-0.049***	-0.025***	-0.022**	0.001	0.010	-0.0001	-0.060***	-0.025
	(0.013)	(0.009)	(0.010)	(0.019)	(0.008)	(0.010)	(0.021)	(0.017)
Tokyo	-0.180***	-0.196***	-0.190***	-0.194***	-0.178***	-0.153***	-0.175***	-0.147***
Round	(0.011)	(0.011)	(0.010)	(0.012)	(0.011)	(0.013)	(0.011)	(0.013)
Obs	810	810	810	810	810	810	810	810
R-squared (within)	0.4268	0.3937	0.3995	0.4036	0.4273	0.4620	0.4072	0.4272
Adjusted R-squared	0.3552	0.3180	0.3245	0.3290	0.3557	0.3947	0.3331	0.3556
F-statistic	68.5057	60.8780	61.3948	60.9592	62.3253	71.3048	64.8373	74.6318

Note: Panel regressions were run for 81 industries over 10 years (every other year from 1969-1987). Heteroskedasticity and autocorrelation-consistent standard errors are in parenthesis. Estimates marked *** are significant at the 1-percent level; those marked ** are significant at the 5-percent level; and those marked * are significant at the 10-percent level. All variables are in logs, except for the change in import penetration and the Tokyo Round dummy (equal to 1 starting in 1979). The estimated equations also include a full set of industry dummies, which are not included in the calculation of the R-squared and the F-statistic, as well as a constant. Each column consists of one regression, with the headings indicating the voting model. Unanimity 1 refers to the model testing unanimity (in which the decisive national government is the one preferring the lowest tariff) under the assumption that the status quo is lower than proposals; median tests the median-voter model; QMV tests the qualified-majority voting requirement (equivalent to the 71^{st} percentile); and logrolling 1 and logrolling 2 test possible logrolling outcomes (60^{th} and 86^{th} percentile, respectively). Unanimity 2 tests whether the pivotal country is the one preferring the highest tariff. The mean regression, in which industry characteristics are averaged across countries, and the sum regression, in which industry characteristics are summed across country, are included as alternatives to the decisive national government framework. Preferred tariff rates for each national government were forecasted over the 1969-1987 period using the results from a regression of 1958 country-specific tariffs against industry and trade characteristics (see Table 1).

Table 4. Weighted Regressions Explaining Common External Tariff

	Unanimity 1	Median	Logrolling 1	QMV	Logrolling 2	Unanimity 2	Sum	Mean
Employment	-0.009	-0.020	-0.020	-0.029*	-0.028	-0.025**	0.061	-0.061
Share	(0.015)	(0.016)	(0.018)	(0.017)	(0.024)	(0.011)	(0.040)	(0.043)
# Firms	0.016***	0.018***	0.030***	0.029***	0.037***	0.049***	-0.054***	0.081***
	(0.005)	(0.006)	(0.007)	(0.009)	(0.009)	(0.006)	(0.011)	(0.016)
Wage	-0.027	-0.042	-0.032	-0.021	0.034	0.070***	-0.051	0.040
	(0.021)	(0.028)	(0.026)	(0.031)	(0.021)	(0.021)	(0.035)	(0.033)
Labor Cost	0.107***	0.028	0.102**	0.108**	0.026	-0.033	0.029	0.201***
Share	(0.028)	(0.031)	(0.045)	(0.043)	(0.041)	(0.029)	(0.073)	(0.068)
Intra-industry	-0.038***	-0.018*	-0.009	-0.002	0.001	-0.017	-0.026	-0.053*
Ratio	(0.013)	(0.011)	(0.013)	(0.012)	(0.012)	(0.013)	(0.019)	(0.029)
Import	0.008	-0.015	-0.005	-0.038**	-0.035**	-0.008	-0.014	-0.015
Penetration	(0.014)	(0.013)	(0.014)	(0.016)	(0.014)	(0.014)	(0.018)	(0.018)
Δ Import	0.0002	0.003***	0.003***	0.001	0.001	0.002**	0.0002**	0.002***
Penetration	(0.0001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.0001)	(0.001)
Export Share	-0.049***	-0.029***	-0.035**	0.008	0.011	-0.0001	-0.054***	-0.026
	(0.013)	(0.011)	(0.014)	(0.018)	(0.011)	(0.010)	(0.020)	(0.018)
Tokyo	-0.180***	-0.182***	-0.177***	-0.181***	-0.187***	-0.153***	-0.174***	-0.147***
Round	(0.011)	(0.011)	(0.010)	(0.010)	(0.014)	(0.013)	(0.010)	(0.012)
Obs	810	810	810	810	810	810	810	810
R-squared (within)	0.4268	0.4057	0.4140	0.4095	0.4134	0.4620	0.4160	0.4258
Adjusted R-squared	0.3552	0.3314	0.3408	0.3356	0.3401	0.3947	0.3430	0.3540
F-statistic	68.5057	60.5277	60.7639	60.5109	61.5083	71.3048	66.8389	73.7175

Note: Panel regressions were run for 81 industries over 10 years (every other year from 1969-1987). Heteroskedasticity and autocorrelation-consistent standard errors are in parenthesis. Estimates marked *** are significant at the 1-percent level; those marked ** are significant at the 5-percent level; and those marked * are significant at the 10-percent level. All variables are in logs, except for the change in import penetration and the Tokyo Round dummy (equal to 1 starting in 1979). The estimated equations also include a full set of industry dummies, which are not included in the calculation of the R-squared and the F-statistic, as well as a constant. Each column consists of one regression, with the headings indicating the voting model. Unanimity 1 refers to the model testing unanimity (in which the decisive national government is the one preferring the lowest tariff) under the assumption that the status quo is lower than proposals; median tests the median-voter model; QMV tests the qualified-majority voting requirement (equivalent to the 71^{st} percentile); and logrolling 1 and logrolling 2 test possible logrolling outcomes (60^{th} and 86^{th} percentile, respectively). Unanimity 2 tests whether the pivotal country is the one preferring the highest tariff. The mean regression, in which industry characteristics are averaged across countries, and the sum regression, in which industry characteristics are summed across country, are included as alternatives to the decisive national government framework. Preferred tariff rates for each national government were forecasted over the 1969-1987 period using the results from a regression of 1958 country-specific tariffs against industry and trade characteristics (see Table 1). All regressions are weighted by the number of votes each country has in the Council of Ministers.

Table 5. J-Tests

		Unweighted		Weighted	
Null	Alternative	t-stat	Conclusion	t-stat	Conclusion
Unanimity 1	Unanimity 2	8.94***	Reject	8.94***	Reject
Unanimity 2	Unanimity 1	6.33***	Reject	6.33***	Reject
Median	Unanimity 2	7.22***	Reject	6.07***	Reject
Unanimity 2	Median	2.36**	Reject	2.75***	Reject
Logrolling 1	Unanimity 2	9.50***	Reject	9.21***	Reject
Unanimity 2	Logrolling 1	3.83***	Reject	5.00***	Reject
QMV	Unanimity 2	9.50***	Reject	9.21***	Reject
Unanimity 2	QMV	3.79***	Reject	3.85***	Reject
Logrolling 2	Unanimity 2	9.50***	Reject	9.21***	Reject
Unanimity 2	Logrolling 2	2.40**	Reject	2.12**	Reject
Sum	Unanimity 2	8.70***	Reject	8.95***	Reject
Unanimity 2	Sum	4.12***	Reject	6.76***	Reject
Mean	Unanimity 2	7.99***	Reject	8.31***	Reject
Unanimity 2	Mean	4.62***	Reject	4.95***	Reject

Note: * denotes significance at the 10 percent level, ** at the 5 percent level and *** at the 1 percent level. Estimates marked *** are significant at the 1-percent level; those marked ** are significant at the 5-percent level; and those marked * are significant at the 10-percent level. Unanimity 1 refers to the model testing unanimity (in which the decisive national government is the one preferring the lowest tariff) under the assumption that the status quo is lower than proposals; median tests the median-voter model; QMV tests the qualified-majority voting requirement (equivalent to the 71st percentile); and logrolling 1 and logrolling 2 test possible logrolling outcomes (60th and 86th percentile, respectively). Unanimity 2 tests whether the pivotal country is the one preferring the highest tariff. The mean regression, in which industry characteristics are averaged across countries, and the sum regression, in which industry characteristics are summed across country, are included as alternatives to the decisive national government framework. Preferred tariff rates for each national government were forecasted over the 1987-2005 period using the results from a regression of 1958 country-specific tariffs against industry and trade characteristics (see Table 1). All regressions are weighted by the number of votes each country has in the Council of Ministers.

Table 6. Sensitivity Analysis—Unweighted Specification

Hypothesis	Decision Rule	Import Pen	Tariff weight	77-87	Time FE's	Linear	Lin Log
Shallow Integration	Unanimity 1	0.4255	0.3856	0.2151	0.6099	0.3102	0.3373
	Median	0.3914	0.3750	0.2204	0.6043	0.3076	0.3215
	Logrolling 1	0.3933	0.3743	0.2373	0.6040	0.3104	0.3140
	QMV	0.3954	0.3679	0.3191	0.6038	0.3102	0.3060
	Logrolling 2	0.4198	0.3866	0.2993	0.6159	0.3234	0.3312
	Unanimity 2	0.4566	0.4260	0.3465	0.6214	0.3355	0.3613
Deep Integration	EU-Wide	0.4016	0.3858	0.3077	0.6104	0.3207	0.3364
	Mean	0.4240	0.3974	0.2956	0.6055	0.3167	0.3448
	Obs.	810	810	486	810	810	810

Note: Panel regressions were run for 81 industries over 10 years (every other year from 1969-1987). Columns refer to different sensitivity tests, while each row corresponds to a voting model. Each cell refers to the within R-squared for a particular model and specification. Unanimity 1 refers to the model testing unanimity (in which the decisive national government is the one preferring the lowest tariff) under the assumption that the status quo is lower than proposals; median tests the median-voter model; QMV tests the qualified-majority voting requirement (equivalent to the 71^{st} percentile); and logrolling 1 and logrolling 2 test possible logrolling outcomes (60^{th} and 86^{th} percentile, respectively). Unanimity 2 tests whether the pivotal country is the one preferring the highest tariff. The mean regression, in which industry characteristics are averaged across countries, and the sum regression, in which industry characteristics are summed across country, are included as alternatives to the decisive national government framework. Preferred tariff rates for each national government were forecasted over the 1969-1987 period using the results from a regression of 1958 country-specific tariffs against industry and trade characteristics (see Table 1).

The sensitivity tests are as follows: *import pen.* refers to a specification without the import penetration and the change in import penetration, which are potentially endogenous; *tariff weight* refers to having the import-weighted common tariff, rather than the simple average, as the dependent variable; *77-87* indicates that the sample was constrained to the 1977-87 period; *time FE's* indicates that time fixed-effects were included instead of a Tokyo Round dummy; *linear* refers to a specification in which neither dependent nor independent variables are in logs, while *lin-log* is a specification where only the independent variables are in logs.

Table 7. Sensitivity Analysis—Weighted Specification

Hypothesis	Decision Rule	Import Pen	Tariff weight	77-87	Time FE's	Linear	Lin Log
Shallow Integration	Unanimity 1	0.4255	0.3856	0.2151	0.6099	0.3102	0.3373
	Median	0.3958	0.3810	0.2207	0.6095	0.3143	0.3272
	Logrolling 1	0.4082	0.3924	0.2430	0.6070	0.3125	0.3285
	QMV	0.4019	0.3776	0.2965	0.6022	0.3157	0.3037
	Logrolling 2	0.4073	0.3683	0.3010	0.6131	0.3155	0.3184
	Unanimity 2	0.4566	0.4260	0.3465	0.6214	0.3355	0.3613
Deep Integration	EU-Wide	0.4146	0.3900	0.2946	0.6098	0.3109	0.3498
	Mean	0.4222	0.3974	0.2905	0.6060	0.3196	0.3435
	Obs.	810	810	486	810	810	810

Note: Panel regressions were run for 81 industries over 10 years (every other year from 1969-1987). Columns refer to different sensitivity tests, while each row corresponds to a voting model. Each cell refers to the within R-squared for a particular model and specification. Unanimity 1 refers to the model testing unanimity (in which the decisive national government is the one preferring the lowest tariff) under the assumption that the status quo is lower than proposals; median tests the median-voter model; QMV tests the qualified-majority voting requirement (equivalent to the 71st percentile); and logrolling 1 and logrolling 2 test possible logrolling outcomes (60th and 86th percentile, respectively). Unanimity 2 tests whether the pivotal country is the one preferring the highest tariff. The mean regression, in which industry characteristics are averaged across countries, and the sum regression, in which industry characteristics are summed across country, are included as alternatives to the decisive national government framework. Preferred tariff rates for each national government were forecasted over the 1969-1987 period using the results from a regression of 1958 country-specific tariffs against industry and trade characteristics (see Table 1).

The sensitivity tests are as follows: *import pen.* refers to a specification without the import penetration and the change in import penetration, which are potentially endogenous; *tariff weight* refers to having the import-weighted common tariff, rather than the simple average, as the dependent variable; *77-87* indicates that the sample was constrained to the 1977-87 period; *time FE's* indicates that time fixed-effects were included instead of a Tokyo Round dummy; *linear* refers to a specification in which neither dependent nor independent variables are in logs, while *lin-log* is a specification where only the independent variables are in logs. All regressions are weighted by the number of votes each country has in the Council of Ministers.

Table 8: Testing Voting Rules—Decisive Country from Industry Characteristics

	Unanimity 1	Median	Logrolling 1	QMV	Logrolling 2	Unanimity 2	Sum	Mean
Employment	0.053***	0.027	0.001	0.067**	0.011	-0.050*	-0.036	-0.033
Share	(0.015)	(0.031)	(0.025)	(0.027)	(0.022)	(0.027)	(0.040)	(0.035)
# Firms	0.007	0.060***	0.062***	0.070***	0.065***	0.064***	0.009	0.076***
	(0.013)	(0.009)	(0.007)	(0.010)	(0.007)	(0.008)	(0.016)	(0.013)
Wage	-0.035	0.026	0.049*	0.109***	0.068***	0.101***	-0.029	0.061**
	(0.024)	(0.029)	(0.029)	(0.031)	(0.016)	(0.018)	(0.036)	(0.029)
Labor Cost	0.058*	0.217***	0.167***	0.169***	0.106***	0.054*	0.077	0.161***
Share	(0.030)	(0.054)	(0.056)	(0.054)	(0.035)	(0.032)	(0.076)	(0.062)
Intra-industry	-0.058	-0.030	-0.028*	-0.046***	-0.022**	-0.012	-0.042**	-0.057*
Ratio	(0.044)	(0.024)	(0.016)	(0.016)	(0.010)	(0.009)	(0.020)	(0.031)
Import	0.030*	-0.010	0.006	0.014	0.011	-0.009	-0.015	-0.012
Penetration	(0.018)	(0.015)	(0.015)	(0.016)	(0.013)	(0.013)	(0.020)	(0.018)
Δ Import	0.0004**	0.002**	0.002**	0.002**	0.0002	0.0004*	0.001***	0.002**
Penetration	(0.0002)	(0.001)	(0.001)	(0.001)	(0.0002)	(0.0002)	(0.001)	(0.001)
Export Share	-0.051***	-0.023	-0.028*	-0.036**	-0.016	0.001	-0.060***	-0.025
	(0.012)	(0.014)	(0.015)	(0.014)	(0.012)	(0.010)	(0.021)	(0.017)
Tokyo	-0.149***	-0.144***	-0.159***	-0.166***	-0.174***	-0.139***	-0.175***	-0.147***
Round	(0.013)	(0.013)	(0.012)	(0.013)	(0.012)	(0.010)	(0.011)	(0.013)
Obs	810	810	810	810	810	810	810	810
R-squared (within)	0.4376	0.4331	0.4280	0.4533	0.4444	0.4818	0.4072	0.4272
Adj R-squared	0.3673	0.3623	0.3565	0.3849	0.3750	0.4170	0.3331	0.3556
F-statistic	69.8318	75.5643	70.9834	66.8558	72.4385	71.2162	64.8373	74.6318

Note: Panel regressions were run for 81 industries over 10 years (every other year from 1969-1987). Heteroskedasticity and autocorrelation-consistent standard errors are in parenthesis. Estimates marked *** are significant at the 1-percent level; those marked ** are significant at the 5-percent level; and those marked * are significant at the 10-percent level. All variables are in logs, except for the change in import penetration and the Tokyo Round dummy (equal to 1 starting in 1979). The estimated equations also include a full set of industry dummies, which are not included in the calculation of the R-squared and the F-statistic, as well as a constant. Each column consists of one regression, with the headings indicating the voting model. Unanimity 1 refers to the model testing unanimity (in which the decisive national government is the one preferring the lowest tariff) under the assumption that the status quo is lower than proposals; median tests the median-voter model; QMV tests the qualified-majority voting requirement (equivalent to the 71^{st} percentile); and logrolling 1 and logrolling 2 test possible logrolling outcomes (60^{th} and 86^{th} percentile, respectively). Unanimity 2 tests whether the pivotal country is the one preferring the highest tariff. The mean regression, in which industry characteristics are averaged across countries, and the sum regression, in which industry characteristics are summed across country, are included as alternatives to the decisive national government framework. Regressions are based on data for the country or countries whose industry characteristics lie at the relevant percentile.

Table 9: Testing Voting Rules—Decisive Country from Industry Characteristics, Weighted Specification

	Unanimity 1	Median	Logrolling 1	QMV	Logrolling 2	Unanimity 2	Sum	Mean
Employment Share	0.053***	-0.007	-0.009	0.012	-0.015	-0.050*	0.061	-0.061
	(0.015)	(0.033)	(0.029)	(0.029)	(0.025)	(0.027)	(0.040)	(0.043)
# Firms	0.007	0.064***	0.075***	0.066***	0.079***	0.064***	-0.054***	0.081***
	(0.013)	(0.012)	(0.010)	(0.010)	(0.010)	(0.008)	(0.011)	(0.016)
Wage	-0.035	0.014	0.057*	0.022	0.061**	0.101***	-0.051	0.040
	(0.024)	(0.031)	(0.032)	(0.030)	(0.024)	(0.018)	(0.035)	(0.033)
Labor Cost Share	0.058*	0.279***	0.144**	0.190***	0.084*	0.054*	0.029	0.201***
	(0.030)	(0.054)	(0.057)	(0.058)	(0.048)	(0.032)	(0.073)	(0.068)
Intra-industry Ratio	-0.058	-0.050**	-0.016	-0.032**	-0.019	-0.012	-0.026	-0.053*
	(0.044)	(0.022)	(0.018)	(0.016)	(0.013)	(0.009)	(0.019)	(0.029)
Import Penetration	0.030*	-0.017	-0.012	-0.001	-0.002	-0.009	-0.014	-0.015
	(0.018)	(0.016)	(0.016)	(0.017)	(0.014)	(0.013)	(0.018)	(0.018)
Δ Import Penetration	0.0004**	0.003***	0.002**	0.002**	0.0001	0.0004*	0.0002**	0.002***
	(0.0002)	(0.001)	(0.001)	(0.001)	(0.0002)	(0.0002)	(0.0001)	(0.001)
Export Share	-0.051***	-0.035**	-0.021	-0.032**	-0.004	0.001	-0.054***	-0.026
	(0.012)	(0.016)	(0.015)	(0.016)	(0.017)	(0.010)	(0.020)	(0.018)
Tokyo Round	-0.149***	-0.145***	-0.160***	-0.157***	-0.168***	-0.139***	-0.174***	-0.147***
	(0.013)	(0.011)	(0.011)	(0.011)	(0.013)	(0.010)	(0.010)	(0.012)
Obs	810	810	810	810	810	810	810	810
R-squared (within)	0.4376	0.4391	0.4230	0.4267	0.4378	0.4818	0.4160	0.4258
Adj R-squared	0.3673	0.3690	0.3509	0.3550	0.3675	0.4170	0.3430	0.3540
F-statistic	69.8318	67.7503	68.1814	60.4478	71.1737	71.2162	66.8389	73.7175

Note: Panel regressions were run for 81 industries over 10 years (every other year from 1969-1987). Heteroskedasticity and autocorrelation-consistent standard errors are in parenthesis. Estimates marked *** are significant at the 1-percent level; those marked ** are significant at the 5-percent level; and those marked * are significant at the 10-percent level. All variables are in logs, except for the change in import penetration and the Tokyo Round dummy (equal to 1 starting in 1979). The estimated equations also include a full set of industry dummies, which are not included in the calculation of the R-squared and the F-statistic, as well as a constant. Each column consists of one regression, with the headings indicating the voting model. Unanimity 1 refers to the model testing unanimity (in which the decisive national government is the one preferring the lowest tariff) under the assumption that the status quo is lower than proposals; median tests the median-voter model; QMV tests the qualified-majority voting requirement (equivalent to the 71st percentile); and logrolling 1 and logrolling 2 test possible logrolling outcomes (60th and 86th percentile, respectively). Unanimity 2 tests whether the pivotal country is the one preferring the highest tariff. The mean regression, in which industry characteristics are averaged across countries, and the sum regression, in which industry characteristics are summed across country, are included as alternatives to the decisive national government framework. Regressions are based on data for the country or countries whose industry characteristics lie at the relevant percentile. All regressions are weighted by the number of votes each country has in the Council of Ministers.

Table 10: Testing Voting Rules—Decisive Country from Most Influential Characteristic

	Unanimity 1	Median	Logrolling 1	QMV	Logrolling 2	Unanimity 2	Sum	Mean
Employment	-0.0002	0.008	0.027**	-0.010	-0.009	0.011	-0.036	-0.033
Share	(0.012)	(0.011)	(0.012)	(0.012)	(0.011)	(0.011)	(0.040)	(0.035)
# Firms	0.024***	0.059***	0.057***	0.059***	0.062***	0.062***	0.009	0.076***
	(0.006)	(0.008)	(0.007)	(0.009)	(0.007)	(0.006)	(0.016)	(0.013)
Wage	0.018	0.058**	0.025	0.025	0.092***	0.064***	-0.029	0.061**
	(0.020)	(0.024)	(0.019)	(0.021)	(0.017)	(0.020)	(0.036)	(0.029)
Labor Cost	0.033	-0.009	0.111***	0.088***	-0.043*	-0.021	0.077	0.161***
Share	(0.027)	(0.035)	(0.026)	(0.028)	(0.025)	(0.028)	(0.076)	(0.062)
Intra-industry	0.003	-0.024**	-0.008	-0.027***	-0.014	-0.017*	-0.042**	-0.057*
Ratio	(0.014)	(0.012)	(0.011)	(0.009)	(0.011)	(0.009)	(0.020)	(0.031)
Import	0.004	0.011	0.007	0.016	0.014	0.014	-0.015	-0.012
Penetration	(0.015)	(0.013)	(0.011)	(0.011)	(0.013)	(0.012)	(0.020)	(0.018)
Δ Import	0.0004**	0.001	0.0001	0.0003	0.0001	0.0003	0.001***	0.002**
Penetration	(0.0002)	(0.001)	(0.0002)	(0.0002)	(0.0003)	(0.0004)	(0.001)	(0.001)
Export Share	-0.047***	-0.011	-0.008	-0.027***	-0.012	-0.017*	-0.060***	-0.025
	(0.016)	(0.011)	(0.011)	(0.009)	(0.010)	(0.010)	(0.021)	(0.017)
Tokyo	-0.171***	-0.175***	-0.160***	-0.165***	-0.173***	-0.158***	-0.175***	-0.147***
Round	(0.012)	(0.015)	(0.011)	(0.012)	(0.013)	(0.012)	(0.011)	(0.013)
Obs	810	810	810	810	810	810	810	810
R-squared (within)	0.4201	0.4222	0.4397	0.4346	0.4442	0.4555	0.4072	0.4272
Adj R-squared	0.3476	0.3500	0.3696	0.3640	0.3747	0.3874	0.3331	0.3556
F-statistic	66.5202	66.1847	63.0391	63.9200	73.8117	80.3277	64.8373	74.6318

Note: Panel regressions were run for 81 industries over 10 years (every other year from 1969-1987). Heteroskedasticity and autocorrelation-consistent standard errors are in parenthesis. Estimates marked *** are significant at the 1-percent level; those marked ** are significant at the 5-percent level; and those marked * are significant at the 10-percent level. All variables are in logs, except for the change in import penetration and the Tokyo Round dummy (equal to 1 starting in 1979). The estimated equations also include a full set of industry dummies, which are not included in the calculation of the R-squared and the F-statistic, as well as a constant. Each column consists of one regression, with the headings indicating the voting model. Unanimity 1 refers to the model testing unanimity (in which the decisive national government is the one preferring the lowest tariff) under the assumption that the status quo is lower than proposals; median tests the median-voter model; QMV tests the qualified-majority voting requirement (equivalent to the 71^{st} percentile); and logrolling 1 and logrolling 2 test possible logrolling outcomes (60^{th} and 86^{th} percentile, respectively). Unanimity 2 tests whether the pivotal country is the one preferring the highest tariff. The mean regression, in which industry characteristics are averaged across countries, and the sum regression, in which industry characteristics are summed across country, are included as alternatives to the decisive national government framework. Regressions are based on data for the country whose most influential characteristic, lies at the relevant percentile.

Table 11: Testing Voting Rules—Decisive Country from Most Influential Characteristic, Weighted Specification

	Unanimity 1	Median	Logrolling 1	QMV	Logrolling 2	Unanimity 2	Sum	Mean
Employment Share	-0.0002	-0.030*	-0.013	-0.016	-0.011	0.011	0.061	-0.061
	(0.012)	(0.018)	(0.013)	(0.015)	(0.012)	(0.011)	(0.040)	(0.043)
# Firms	0.024***	0.050***	0.060***	0.063***	0.072***	0.062***	-0.054***	0.081***
	(0.006)	(0.011)	(0.009)	(0.012)	(0.008)	(0.006)	(0.011)	(0.016)
Wage	0.018	-0.001	-0.014	0.026	0.035*	0.064***	-0.051	0.040
	(0.020)	(0.026)	(0.024)	(0.034)	(0.020)	(0.020)	(0.035)	(0.033)
Labor Cost Share	0.033	0.039	0.040	0.077	0.071***	-0.021	0.029	0.201***
	(0.027)	(0.037)	(0.037)	(0.048)	(0.024)	(0.028)	(0.073)	(0.068)
Intra-industry Ratio	0.003	-0.022	-0.033***	-0.024**	-0.015	-0.017*	-0.026	-0.053*
	(0.014)	(0.015)	(0.011)	(0.012)	(0.010)	(0.009)	(0.019)	(0.029)
Import Penetration	0.004	-0.014	0.011	0.0002	0.013	0.014	-0.014	-0.015
	(0.015)	(0.018)	(0.015)	(0.013)	(0.013)	(0.012)	(0.018)	(0.018)
Δ Import Penetration	0.0004**	0.002**	0.001*	0.0003	0.0002	0.0003	0.0002**	0.002***
	(0.0002)	(0.001)	(0.001)	(0.0002)	(0.0002)	(0.0004)	(0.0001)	(0.001)
Export Share	-0.047***	-0.024	-0.034***	-0.004	-0.028***	-0.017*	-0.054***	-0.026
	(0.016)	(0.017)	(0.011)	(0.012)	(0.010)	(0.010)	(0.020)	(0.018)
Tokyo Round	-0.171***	-0.169***	-0.168***	-0.166***	-0.153***	-0.158***	-0.174***	-0.147***
	(0.012)	(0.012)	(0.011)	(0.012)	(0.012)	(0.012)	(0.010)	(0.012)
Obs	810	810	810	810	810	810	810	810
R-squared (within)	0.4201	0.4126	0.4240	0.4183	0.4442	0.4555	0.4160	0.4258
Adj R-squared	0.3476	0.3392	0.3520	0.3456	0.3748	0.3874	0.3430	0.3540
F-statistic	66.5202	64.5207	62.9585	61.7178	65.9399	80.3277	66.8389	73.7175

Note: Panel regressions were run for 81 industries over 10 years (every other year from 1969-1987). Heteroskedasticity and autocorrelation-consistent standard errors are in parenthesis. Estimates marked *** are significant at the 1-percent level; those marked ** are significant at the 5-percent level; and those marked * are significant at the 10-percent level. All variables are in logs, except for the change in import penetration and the Tokyo Round dummy (equal to 1 starting in 1979). The estimated equations also include a full set of industry dummies, which are not included in the calculation of the R-squared and the F-statistic, as well as a constant. Each column consists of one regression, with the headings indicating the voting model. Unanimity 1 refers to the model testing unanimity (in which the decisive national government is the one preferring the lowest tariff) under the assumption that the status quo is lower than proposals; median tests the median-voter model; QMV tests the qualified-majority voting requirement (equivalent to the 71st percentile); and logrolling 1 and logrolling 2 test possible logrolling outcomes (60th and 86th percentile, respectively). Unanimity 2 tests whether the pivotal country is the one preferring the highest tariff. The mean regression, in which industry characteristics are averaged across countries, and the sum regression, in which industry characteristics are summed across country, are included as alternatives to the decisive national government framework. Regressions are based on data for the country whose most influential characteristic, lies at the relevant percentile. All regressions are weighted by the number of votes each country has in the Council of Ministers.

Table 12. Decisive National government under Unanimity, NACE 43 (Textile Industry)

	1st Enlargement (1973)		2nd Enlargement (1981)		3rd Enlargement (1986)	
	1971	1973	1979	1981	1985	1987
High Tariff	Italy	Italy	France	*Greece*	Greece	*Portugal*
	France	France	UK	France	France	*Spain*
	Germany	Germany	Italy	Italy	Italy	Greece
	Belgium	*UK*	Germany	UK	UK	France
	Netherlands	*Ireland*	Ireland	Germany	Germany	Italy
		Belgium	Denmark	Denmark	Denmark	UK
		Denmark	Belgium	Ireland	Belgium	Denmark
		Netherlands	Netherlands	Belgium	Ireland	Germany
				Netherlands	Netherlands	Belgium
						Ireland
Low Tariff						Netherlands

Note: The first enlargement consisted of Ireland, the UK, and Denmark; the second enlargement brought in Greece; and the third enlargement consisted of Spain and Portugal. Countries in italics are the new members. The decisive national government is the one whose predicted preferred tariff lies at the highest percentile.