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## Deconstructing EU Trade Policy

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# Deconstructing EU Trade Policy

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Abstract: We examine the political economy underpinnings of EU import protection. This includes the relatively standard approach of examining the pattern of tariffs. However, we also introduce the use of general equilibrium estimates of the direct and indirect marginal impacts of protection at the sector level for econometric estimation of the revealed pattern of policy weights. This GE approach yields estimates of political weights based on economic effects. The resulting weights show a bias toward exporting sectors not evident in direct analysis of tariffs. They also lend insight into relative protection of agriculture and manufacturing. We also find that industry size matters, as does the national posture of industry.

JEL Codes: F13, F14, D72

Keywords:EU trade policy, political economy of import protection, empirical determinants of tariffs

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## 1. Introduction

The current structure of trade protection in the EU has several determinants that can be traced to historical factors, resource constraints, and political economy arguments. Analyses involving the latter, however, have been relatively scarce due to the complexities inherent in a process that engages a multitude of actors not only from Member countries, but also from the central institutions such as the European Commission. The literature has instead focused attention on the determination of trade policy in the US.

In the context of the European Union, policies are influenced by both national and regional factors in ways which are hard to detect. Explicit lobbying behaviour in the Union, for instance, is particularly difficult to track. Unlike in the US, campaign contributions in most EU countries are heavily restricted, if not forbidden, so that lobbying comes in much less overt forms. This is crucial because in standard endogenous protection models, the amount of lobbying directly translates into weights attached by government to industry interests. As government choice hinges essentially on the issue of trade-off between competing societal and private interests, these weights determine where the policy chips will fall.

Even when data on campaign contributions are available, recent empirical work on US trade protection illustrates the various problems involved in capturing the extent of lobbying activities. In a survey of empirical approaches on endogenous protection, Krishna and Gawande (2001) discuss two recent tests of the Grossman-Helpman model performed by Goldberg and Maggi (1999), and Gawande and Bandyopadhyay (2000), where data on political contributions of corporate institutions were used as lobbying indicators. Problems pointed out by Krishna and Gawande consist of the difficulty of isolating that part of the total financial support particularly aimed at influencing trade policy, and the exclusion of non-corporate sources of electoral financial support, such as labor unions. This may have resulted in mis- and under-estimation of the political strength of private interests, and thus may account for some curious results found in these studies. One is the high estimates of the weights government attaches to overall welfare, spanning from 100 to 3000, and the other is the very low value of total political contributions (in the range of $30 million) relative to the large deadweight loss and producer surplus stemming from protection. The former counters the expectations of the theoretical model while the latter hints to the magnitude of underreporting of

private sector lobbying, and to the amount of indirect influence peddling never observed at all.

As noted earlier, difficulties are magnified once a similar approach is applied to the EU case. We therefore adopt in this paper an alternative route to our goal of assessing the relative importance of industry against overall interests in the determination of trade policy in the EU. We instead back out the weights implied by the marginal impacts of the set of import policies in the EU. In particular, we use a numerical general equilibrium model of the EU to estimate the direct marginal effect of sector-level protection on protected industries, the indirect effect on upstream and downstream industries, and the effect on overall welfare. With these marginal effects as a starting point, we then econometrically estimate the apparent weights of industry in policymaking given the current tariff structure. We also aim for a more detailed view of the EU political market by further deconstructing these weights along the lines of industry nationality, and other related sector characteristics. Unraveling national preferences is particularly important in the EU context. While the supply of regional protection obviously corresponds to the sum of individual national demands, the common trade policy in the EU and the complexities surrounding it conceal the interplay of private, national and aggregate regional interests.

We have organized the paper as follows. Section 2 provides background. In Section 3 we cover data sources. In Section 4 we examine basic patterns of EU import protection, using a relatively standard political economy framework for testing the relationships between sectoral tariff variations and selected industry characteristics identified as determinant by theory. In Section 5, we then examine what drives the observed patterns by employing a computational model to produce estimates of the general equilibrium marginal income effects given the actual rates and pattern of protection and production across the EU. From these marginal estimates, we estimate econometrically the implied weights for individual sectors relative to the weight assigned to overall economic welfare. This allows a ranking of industries according to the assigned relative weights. In Section 6 we explore how national and EU-wide industry characteristics, especially the nationality of various industries, bears on the determination of the EU-wide industry coefficients. This provides some indication of the individual policy preferences of Member States. In Section 7 we offer some final observations, and then conclude.

## 2. Background

The evolution of European tariffs, as shown in Figure 1, reveals not only trends in trade protection, but also gives some indication of the liberal and protectionist forces at play across the continent. The 1968 common external tariffs (CET) of 10.4% is the arithmetical average of the Italian and French high tariffs (16.8% and 15.3%, respectively), and the lower ones of Germany and the Benelux countries (5.8% and 8.7%). The same differentiation can be seen in the old EFTA as well, with the UK and Austria being relative more protectionist (14.9%, 11.4%), compared to their Scandinavian counterparts (Sweden, 6.3%; Denmark, 5.2%).

[Figure 1 about here]

After four and half decades, tariff protection in industrial goods has markedly declined in importance, with the simple average CET posting at a historically low 4.1% in 2001. However, aside from tariff peaks in chemicals, footwear, transport vehicles, more opaque protectionist instruments have been introduced, so that when these non-tariff barriers are accounted for, the rate of overall protection almost doubles to 7.7% (Messerlin, 2001).

Agricultural protection is typically a different story, and in the European case, it even merits a distinct Community-wide sectoral policy, the Common Agricultural Policy (a.k.a. the CAP). Free internal agricultural trade has been accompanied by a substantial increase in external protection that for years has proven to be resistant to any reform. Liberalization did make some headway in the 1990s[1], but Messerlin still reports a high overall protection rate of 31.7%.

Figure 2 illustrates applied tariff rates in the EU's agricultural, manufacturing and mining sectors for 2001.[2] Sugar and dairy products, having been excluded in the 1992 CAP Reform, register the highest rates of protection, 116%, and 36.8%, respectively. Rice (54%) production is likewise heavily protected (54%), and is meat (22%), and grains (19%). Tariff peaks in the manufacturing sector are fewer in number (except in trucks, mostly agro-related: processed foods, 10.2%; beverages and tobacco, 7.5%) and at much lower rates.

[1] See Pelkmans (2001), chapter 11, pp. 219 -222.
[2] The source of these data is discussed below, in Section 3.

[Figure 2 about here]

Figure 3, in turn, ranks sectors according to their contribution to EU-15 income in 2001, and shows which member states regard them as their most significant sector[3]. The 4 largest sectors in the EU (chemicals, other machineries, motor vehicles, and electrical equipments) account for 43% of EU total output value (excluding services), and Germany is the largest producer in all four. However, Germany is likewise a major producer of some important agricultural sectors: it supplies 22% of total production of milk and dairy products, 44% of oil seed oils, 25% of other grains and 23% of the most politically sensitive product, sugar. Italy's interest is particularly concentrated in textiles (supplying 24% of output), apparel (35%) and leather (includes footwear, 43%). However, compared to other country suppliers, these industries account for a greater share in Portugal's total output. In other tariff peak products such as rice, Italy (supplying 54%) and Spain (31%) greatly benefit, while in meat, the four big members: France (18%), UK (16%), Germany (16%), and Italy (12%), receive the most producer surplus from protection.

[Figure 3 about here]

Early empirical tests on the European pattern of protection have shown that despite the differences in the market and production structures across members, the level of Community tariffs did not significantly change the relative protection between different sectors. Constantopoulos (1974) noted that while European countries have followed different tariff regimes, the national structure of protection in the 6 original EEC countries did not actually differ very much. Her results also show that extra-EEC protection displayed positive correlation with the relative share of unskilled labour and the level of R & D content. This implies that regardless of differences in specialization, the same Stolper-Samuelson effects seemed to be at play and that some congruence of industrial policy goals existed among the original Members.

[3] A Member State is reported to have the highest stake in a sector if its output share (vis-a-vis total EU output, excluding services) is the highest compared to the rest of the EU-15. Italics refer to the country where the relevant sector accounts for the highest output share (vis-a-vis total national output, excluding services), also relative to the other members.

More recent analytical and empirical work also underscores the role of political economy determinants. Viewing trade protection from a political economy standpoint entails not only an understanding of individual preferences over a range of policy choices, but also information on how these preferences are aggregated and conveyed through actions or interventions in the political arena. Since most endogenous protection models are demand-driven, this characterization of the manner in which competing interest groups wield influence and express their political demands is a critical element in any analytical exercise. In the absence of sufficient factual data, the approach often taken is to refer to readily observable industry characteristics that may influence the effectiveness of lobbying behaviour or strengthen the political weight of sector interests. Examples of properties that map well with political influence, and hence, with protection trends, are those that facilitate collective action among producers: a high concentration of ownership, for instance, implies few players and thus less likelihood of free-riding; bigger industry size, on the other hand, raises the stakes involved in cooperation among producers to secure protection.

There are models of endogenous protection which instead stress the supply incentives, such as the electoral need of governments to win as many votes possible. In this instance, labor-intensity (i.e. voting strength) of the sector is key. Still others draw attention to the (conservative) politicians´ aversion to changing the prevailing level and distribution of income, so that tariffs are used to compensate for the income shifts brought about by unemployment or surges in import penetration. Thus, it is the changes, not the composition or the absolute levels of employment and imports, that explain the supply of protection. However, evidence on the extent and direction of tariff effects associated with these industry characteristics is ambiguous. Consider for example the case of the role of industry size. Larger industries are said to be politically important because of the votes they deliver. Hence, one can expect to find the higher rates of protection in larger industries. (Finger, Hall & Nelson, 1982; Lee & Swagel, 1997). On the other hand, these sectors face more collective action problems, so that tariffs are likely to be lower (Trefler, 1993). Cadot, de Melo & Olarreaga (1999) also predict protection to drop in these industries as a result of general equilibrium adjustment in the

labour market[4]. In the Grossman-Helpman model (1992, 1994), industry size is not at all important if sector lobbying is zero.

In recent empirical work on the EU, Tavares (2004) tests the explanatory power of political economy determinants cited in the literature but embeds these in alternative political economy modeling frameworks in order to determine which model works best to explain the level of regional protection. He formulates different model specifications that reflect the degree of European integration, with lobbying activity being more regionally oriented the more policymaking process resembles that of a unitary state. The author finds that external tariffs from 1987-1999 correlate highly with the number of firms (-), wage rate (-), labor cost share (+), the import penetration ratio (-) and the export share (-). Results also support the hypothesis that the movement towards deeper integration, ushered in by the 1987 Single Market programme, did lead to a more centralized tariff-setting process. Technically, this means that the specification wherein national size or influence do *not* play a role (i.e. industry characteristics are merely summed up or averaged to form the EU characteristics used for estimation), would seem to explain the structure of protection better than those where the preference of the decisive country voter is what counts. In an earlier work however, Tavares (2001) reported opposite results. He then reported that policymaking reflects bargaining between members who are themselves influenced by national lobbies. In fact, the best specification the author finds in that paper is one where the exogenous variables are weighted according to the share of votes accorded to each country in the Council of Ministers. This implies, for instance, that the preferences of larger countries, having more votes, are given more weight in decision making.

## 3. Data Sources

a. Tariff and protection data

We work with a set of integrated social accounting data that combine import protection with input-output structures, intermediate and final demand, bilateral trade flows, and tariff protection. These are the global social accounting data organized by the Global Trade Analysis Project (GTAP), a research consortium that includes international

[4] Wages, and production costs rise because of the output increase initially triggered by tariffs, so that eventually the demand for protection falls.

organizations like the World Bank, OECD, European Commission, and several UN and national agencies. We use the GTAP version 5 and version 6 databases, which are for 1997 and 2001 respectively. (See Dimaranan and McDougall, 2002). Within this database, European industrial production and employment flows are based on sets of Member State social accounting data originating, ultimately, with Eurostat. These are supplemented by data on bilateral import protection, including adjustments for non-reciprocal preferential import protection and bilateral free trade agreements. In the case of agriculture, the data also include ad valorem equivalents of specific tariffs. The 2001 protection data are based on Bouet et al (2004). The 1997 protection data are from the World Bank and UNCTAD. In the case of both the 1997 and 2001 data, tariffs are drawn from the WTOs integrated database of tariffs and bindings, and well as the UNCTAD TRAINS dataset and national schedules.

A great advantage of these data is that we have a consistent mapping of economic flow data (intermediate demands, final goods production, imports, exports, and final demand) to corresponding trade policy data. In the case of the EU, our focus here, the pattern of protection vis-à-vis external trading partners will, overall, reflect the politics that has driven the EU to leave out sensitive sectors in bilateral negotiations on free trade areas, and also the sensitivity of these same sectors as reflected in MFN tariff schedules.

b. Marginal impact estimates

We also work with estimates of the marginal impact of changes in tariffs on capital income at the sector level, and on overall real incomes. This involves applying small (1%) changes in EU external tariffs sector by sector within a general equilibrium model incorporating the data outlined above, and using the model to then estimate the direct and indirect impact of each tariff on overall economic welfare (measured as equivalent variation) and also on capital income within each sector.

The basic modeling framework, as implemented, is quite complex, and we refer the reader to Hertel et al (1997).[5] For our purposes, the key features of the numerical model can be summarized as follows. First, we define composite goods in each region *r* that are either purchased as intermediates of consumed as final goods. The set of prices

[5] The actual model files used to estimate the marginal effects are available for download.

for these composite or aggregate goods within a region $\mathbf{P}_{\mathbf{A}}^{\mathbf{r}}$ will be a function of the set of prices for domestic goods within a region $\mathbf{P}_{\mathbf{d}}^{\mathbf{r}}$ and the set of prices for imported goods $\mathbf{P}_{\mathbf{m}}^{\mathbf{r}}$

$$\mathbf{P}_{\mathbf{A}}^{\mathbf{r}} = f_A^r\left(\mathbf{P}_{\mathbf{d}}^{\mathbf{r}}, \mathbf{P}_{\mathbf{m}}^{\mathbf{r}}\right) \tag{1}$$

Equation (1) involves a CES composite of domestic and imported goods. The internal price for imports will in turn be a function of the set of tariffs, where $T = 1 + \tau$, and also the set of world prices for imports.

$$\mathbf{P}_m^{\mathbf{r}} = \mathbf{T}'\mathbf{P}_{\mathbf{m}}^{*} \tag{2}$$

The domestic price will depend on the price of primary inputs indexed over factors *v*, $\mathbf{P}_{\mathbf{v}}^{\mathbf{r}}$, as well as the price of composite goods used as intermediates, $\mathbf{P}_{\mathbf{A}}^{\mathbf{r}}$. This is shown as equation (3):

$$\mathbf{P}_d^{\mathbf{r}} = f_d^r\left(\mathbf{P}_v^{\mathbf{r}}, \mathbf{P}_A^{\mathbf{r}}\right) \tag{3}$$

The cost function in equation (3) follows from CES technologies for value-added, combined with a Leontief-nest between intermediate goods and value added. Given domestic prices for inputs and outputs, the demand for primary inputs **v** will be a function of unit input coefficients (determined by relative input prices) and by total demand for domestic output **Q**.

$$\mathbf{v}^{\mathbf{r}} = \left(\mathbf{Q}^{\mathbf{r}}\right)'\left(\mathbf{c}_{\mathbf{v}}^{\mathbf{r}}\left(\mathbf{P}_{\mathbf{v}}^{\mathbf{r}}\right)\right) \tag{4}$$

The input coefficients **c** follow from the CES production technology for value added. Demand for goods will be a function of the entire set of global incomes **I** and prices **P**.

$$\mathbf{Q} = f_q\left(\mathbf{P}, \mathbf{I}\right) \tag{5}$$

Where incomes are an outcome of the full general equilibrium solution across final and intermediate demands within the model. Finally, incomes in each region are the sum of trade taxes and factor incomes.

$$I^r = \left(\mathbf{P}_\mathbf{v}^\mathbf{r}\right)'\left(\mathbf{v}^\mathbf{r}\right) + \left(\mathbf{P}_\mathbf{m}^*\right)'\left(\mathbf{T}-\mathbf{1}\right) \tag{6}$$

We apply the model with a two-region version of the dataset, the two regions being the EU and the rest of the world. Conceptually therefore, if we take one of the regions *r* as the European Union, and we differentiate the entire system with respect to a given EU tariff, we will arrive at a marginal impact of this tariff on national income (equation 6) and also factor incomes (equation 4). Empirically, we apply 1% changes in the power of the tariff $T = 1 + \tau$ to estimate such marginal changes. In the context of the model, this yields changes to capital income to each sector (where we treat capital as fixed to a sector) as well as changes in overall national income *I*. Our sectors are those in Figure 2.

## 4. Tariffs and Industry Characteristics

Given our data, we now revisit the basic approach of the existing literature with regard to tariff patterns. We focus on relationships between protection and some of the political determinants earlier mentioned, testing for the importance of nationality on the sectoral variation in tariffs. In particular, we examine the role of industry size both EU-wide and that of the 15 individual national economies[6]. In both the adding-machine and in the Grossman-Helpman models, size is expected to enhance the political value of industry rents to national leaders, who collectively exercise tariff-setting powers in the Council of Ministers. In theory, large industries are hindered only by free-riding in launching an effective lobby. In practice, as long as the stakes are high enough, even with many firms, the collective action problem is solved through industry associations, cooperation across lobbies, and leadership by the very large firms, so that rent-seeking activities extends to influence the regional agenda-setting body (European Commission) as well. Tavares

[6] Namely: Austria (Aut), Belgium (Bel), Denmark (Den), Finland (Fin), France (Fra), Germany (Ger), Great Britain (GBR), Greece (Gre), Ireland (Ire), Italy (Ita), Luxembourg (Lux), Netherlands (Ned), Portugal (Por), Spain (Spa), and Sweden (Swe).

quoted Lehmann's (2003) report that in 2000, about 2,600 interest groups are active in Brussels, composed of European trade federations (±30%), commercial consultants (± 20%), European companies (±10%), national business (10%), European NGOs (±10%), labor organizations (±10%), regional representations (±5%), international organizations (±5%), and think tanks (±1%).

In a single-country setting, exports share are theoretically expected to correlate negatively to tariff levels[7]. However, producers oriented towards exports outside the Union, often also have large stakes in exporting within the region as well. The extreme case is modelled in Grossman and Helpman (1994) where the free trade area (FTA) is politically sustained solely by the lobbying of member exporters who stand to gain only if trade diversion is the dominant outcome of the FTA. In reality, extra-EU exports are also significant for many companies, thus making the retaliation of non-Member governments an overriding concern. Still, in so far as tariffs sometimes turn up to react positively to export shares (as in Tavares, 2001), one could entertain the plausibility of export lobbying to protect regional market shares.

For our estimation, we rely on the data as outlined above for the 15 European Union Members in 1997 and 2001, respectively. As a measure of protection we use extra-EU trade weighted tariff rates which reflect the pattern of preferential trade arrangements, WTO concessions, and the exclusion of sectors from these arrangements. Industry size is measured by shares in total EU output value, and denoted as *Oshare*. To gauge for the intensity of unskilled labour use, we include it here as *Unsk*, using the shares of unskilled wages in total wages by sector as a proxy. Export orientation (*Xshare*) is indicated here by the average self-sufficiency ratio, which is the ratio of domestic production over domestic use[8]. To capture the nationality of each industry, we once again use industry size, but this time taking the deviation of national sectoral output in share terms from the EU average ($\Delta_{Member}$). We assign a dummy to agricultural products given the special historical and political circumstances surrounding its protection that cannot be captured in our estimation.

Variations in sectoral tariffs are tested against the above-mentioned industry characteristics in a straightforward fashion:

[7] This is due to the assumption that free-riding is more prevalent among exporters compared to import-substituting producers.
[8] Values greater than one for self-sufficiency ratio imply export orientation.

$$\ln(1+\tau)_{i,t} = C + \beta_1 D_{1997} + \beta_2 D_{Agriculture} + \beta_3 Unsk_{i,t} + \beta_4 Oshare_{i,t} \quad (7)$$
$$+\beta_5 Xshare_{i,t} + \sum_m \beta_m \Delta_{Member} + \varepsilon_{i,t}$$

Our panel contains observations for 15 EU countries, 33 agricultural, manufacturing and extraction sectors, and taken for 2 years, 1997 and 2001. All variables except dummies are taken in logs.

OLS results with robust standard errors are reported in Table 1 and Figure 4. These confirm the stylized facts about the highly politicized nature of agricultural protection. All other things equal, the sectoral demand for protection is more likely to be accommodated, the larger is the size of its output. Export shares produce the theoretically expected (negative) effect, also implying that greater import penetration induces more protection. Contrary to previous results, however, sectors where unskilled earnings are important do not appear to invite higher tariffs. However, the link observed here between unskilled wages and tariffs is statistically quite weak and hence does not offer concincing evidence either way relative to past findings in the literature. What is clear in Figure 4 is that the nationality of industries makes a big difference to the extent of protection received. For instance, sectors where Italy, and especially, France, have higher output shares relative to the EU average, also get significantly higher protection, while the opposite applies to sectors important for smaller countries like Belgium, Austria, Netherlands and Ireland. Based on these results, a distinction can be made between high and low tariff countries which is not significantly different from the demarcation that could be derived from the pre-CET tariff levels as illustrated in Figure 1. This suggests that while the European trade regime has substantially liberalized through time in terms of the overall level of protection, the relative position of countries in the trade policy spectrum has remained largely unchanged.

## 5. Estimating Industry Weights

We now take a step away from current practice, focusing on explaining observed patterns by explicitly estimating the objective function of the reduced-form regional policymaker, say for simplicity, the EU Commission. Our goal is to express the level of EU-wide protection as the outcome of the Commission's maximisation problem with

respect to this objective function. This has the advantage of capturing the general equilibrium effects of protection, where for example steel protection may hurt motor vehicles, thereby providing more insight into the interaction of policy choice and the cost and benefits that this choice implies.

We proceed by employing a stylized Grossman-Helpman political influence model, specifying the objective function for the Commission as follows:

$$\Omega = aW + \sum_i b_i W_i \tag{8}$$

where *a* and *b* correspond to the weights attached by the Commission to Community ($W$) and industry welfare ($W_i$), respectively.

Assuming that tariffs (and potentially other policy instruments) are set to maximize this function, the equilibrium tariff rates will map to the following set of first order conditions[9]:

$$\frac{\partial \Omega}{\partial T_j} = a\frac{\partial W}{\partial T_j} + \sum_i b_i \frac{\partial W_i}{\partial T_j} = 0 \tag{9}$$

Rearranging, we then have,

$$\frac{\partial W}{\partial T_j} = -\frac{b_j}{a}\frac{\partial W_j}{\partial T_j} - \sum_{i \neq j} \frac{b_i}{a}\frac{\partial W_i}{\partial T_j} \tag{10}$$

Our data for the left- and right-hand sides of equation (10) come from the marginal shocks to tariffs in our model of the EU economy for 1997 and 2001 as discussed above. Equipped with an assessment of welfare effects, we are then able to evaluate

[9] Note that while we are working with tariffs, one could add other industrial and tax policies to the mix. In theory, for each policy in isolation, the corresponding version of equations (3) and (4) should hold.

econometrically the relative weights, $b_i/a$, given the actual pattern of tariff protection in the EU.

The estimated relative industry weights for our 33 commodities are reported in Table 2. The full estimating equation also includes indirect service sector effects (not shown), and a measure of rest-of-world welfare effects. The rest of world receives no significant weighting, based on the regression results. The pattern of weights is illustrated in figure 5, where all 33 sectors are ranked according to their policy importance, as revealed by their weights relative to aggregate income weights. What is striking in these results is that while manufacturing sectors all receive considerably less protection compared to agriculture, their policy weights are actually greater. This implies that there is not much correlation between tariffs and weights, a rather counter intuitive result underscored by Figure 6. As noted earlier, agricultural protection in Europe has deep political and historical roots, and results here seem to suggest that tariffs are now currently high in agriculture, not strictly because of the political power of farmer groups, but because of the low economy-wide effects that agricultural protection implies. In other words, giving in to their demands carries relatively little welfare implications compared, for example, to steel.[10] However, in manufacturing, tariffs and weights move in a more congruent way. With the exception of oil, coal, gas and refineries, the higher weights attached to iron and steel, apparel, textiles, motor vehicles are reflected in the higher protection they receive relative to other non-farm products. Still, tariffs are considerably lower in manufacturing to begin with, and hence, so are their contributions to overall equilibrium distortion patterns.

[Table 2, Figure 6 about here]

## 6. Deconstructing the Industry Weights

We now proceed by once again inspecting the influence of individual members, this time on the determination of the policy weights assigned by EU on various industries from Table 2. This is done by regressing the estimated relative industry weights, $b_i/a$, against

[10] Put another way, heavy protection for steel would have heavy ramifications for construction, motor vehicles, and the machinery sector, whereas protection of rice *only* hurts consumers, and not so much competing industries.

the same political determinants employed in section 2, and the industry size indicator per EU-15 country. Specifically, our estimating equation is as follows:

$$\ln(b_i/a)_i = C + \beta_1 D_{1997} + \beta_2 D_{Agriculture} + \beta_3 Unsk_{i,t} + \beta_4 Oshare_{i,t} + \beta_5 Xshare_{i,t} + \sum_m \beta_m \Delta_{Member} + \varepsilon_{i,t} \quad (11)$$

OLS results with robust standard errors are reported in Table 2. The results further underscore the findings of low weights being attached to agricultural products, and greater value assigned to larger sectors. This time, however, the negative correlation between unskilled-labour intensity and the policy influence of an industry registers as statistically significant. Also, more export-oriented sectors are given greater political value, even if this is not manifested directly in import protection. This is unsurprising since the logic of comparative advantage leads us to expect these to be among the largest industries in the region.

[Table 3, Figure 7 about here]

One final appeal of this exercise is the estimate of the impact of the nationality variables, as shown in Figure 7. Once again, the French effect is clearly manifested here by large coefficient values and high statistical significance. An industry also ranks higher the greater is the share of Finish production in that sector relative to the EU average. At the other extreme, Greece and most specially, Sweden, are the forces that dampen the importance of industry vis-a-vis societal interests. Austria and Ireland also emerge as pro-consumers, while Germany and Netherlands, seem to give industry a slight preference instead. In general, countries around the EU average do not show statistical significance, while France and Sweden, at the two extremes, stand out, along with Luxemburg, Spain, Austria, and Denmark.

## 7. Conclusions

The applied literature on political economy determinants of important protection is largely focused on the US. Yet the EU offers a contrasting model. Both are customs unions, yet individual national governments play a more direct role in the EC than do

state governments in the US. There are numerous difficulties one can expect in directly observing the political economy underpinnings of trade policy in such a Union, where overt lobbying and political contributions can be illegal, and where the policy mechanisms themselves have evolved in both ambition and complexity. We worka round this problem by using general equilibrium estimates of the impact of EU trade policy to then directly estimate the relative political weights assigned to industry.

As a preliminary step, we have explored basic correlations found and discussed in the literature. Results show that industry size matters, and especially the country origin of industry. Looking at the revealed tariff preferences of the individual EU-15 countries, it is possible to make a distinction between high- (France, Italy) and low- (Benelux, Austria, Ireland) tariff countries. What is interesting is that this mirrors more or less the early classification of countries even before the CET was established in 1968.[11] This suggests that trade policy preferences of countries relative to each other, have remained fairly constant in almost 5 decades of European integration.

To further understand how sectoral interests are valued by policymakers, we have estimated the marginal effects of protection on overall and industry incomes as they are specified in a welfare maximisation problem of an influence-driven government model. Using a general equilibrium framework to explicitly derive these estimates, we are then able to extract the apparent weights of various industries in the policy process. This also allows us to further deconstruct these weights along the lines of industry nationality, and other related characteristics.

Results show several factors reflected in the estimated political weights. First is the role of output size. Standard political economy models, working under the assumption of constant-returns-to-scale, consider the marginal impact of protection on factor incomes to be neutral to size. Hence, the importance attached to industry size is conditional on the amount of lobbying in the sector, as in Grossman & Helpman, or conditional on the amount of nominal votes it can deliver. Our estimates show that the specification where output plays a focal role provides a very good fit, suggesting that more might be at play than what current theory predicts. If one takes scale economies explicitly into account, for instance, then one can envisage channels wherein industry size

[11] An exception is Germany, which appears to have increased its preference for protection. However, the statistical significance of the German coefficient is rather low in our estimates, thereby making it difficult to pose any definitive judgement.

can directly affect the valuation of marginal costs and benefits of lobbying, the extent of deadweight losses that feed into the cost of supplying protection, and the political capital that could be gained if protection thrusts the economy towards a high-growth path.

Second, national priorities and industry characteristics matter not only for tariffs, but also for the assignment of welfare weights. Explaining why the experiments done here consistently point to the French as the most prominent player in EU trade policymaking (at least on the import protection side) is beyond the scope of the paper. However, it is a result that confirms popular beliefs. The history of European integration is, in fact, replete with political ordeals related to efforts to cope with the French and Italian resistance to internal and external trade liberalisation. The most infamous example is perhaps the adoption of the Common Agricultural Policy, commonly regarded as a condition tied by the French government in 1964 to the second round of barriers removal in intra-EC manufacturing trade.

Another significant finding is related to the role of net trade. Outcomes show that while EU readily protects import-competing industries, it actually values the welfare of exporters more. This is a result not evident in the literature grounded on tariff alone, and emerges from our estimation of policy weights. Indeed, the seeming lack of correspondence between high tariffs and high political weights is something of a puzzle until we recall that both direct and indirect effects should matter. This is why it helps to be reminded of the general equilibrium nature of the analysis, where industry weights reflect not only the lobbying power of individual industries concerned, but also capture the continuous balancing of sectoral rents against nationwide interests and against rents in other sectors. Hence, the story behind continued protection in Agriculture may not solely be that pertaining to political strength. It may be partly because of the low region-wide economic impact of protection that feed the propensity of political leaders to bear the economic costs of the ensuing distortions. The CAP may hurt consumers, but its ramifications for industry are relatively light.

Finally, it is worth noting that tariff protection, at least in manufacturing, has indeed become less important for the EU as compared to the past. Only non-Europe OECD and non-WTO countries[12] now face the MFN and tariff peak rates, and even in agriculture, further reforms are being introduced (i.e. in sugar). Still, what this our results

[12] Non-Europe OECD: USA, Canada, Japan, Australia, New Zealand, South Korea, Singapore, Hong-Kong; non-WTO: Russia, Ukraine, and other State-trading countries.

illustrates is that the political economy bedrock of policy making is more complex than a more simple analysis would suggest. Moreover, due to the general equilibrium approach taken here, trade policy can be used to deduce the political weights that could be reflected in other policies as well. Hence, while direct evidence on national and regional preferences might not be in place, this exercise does convey some indications of the general industry weights behind a wider range of policies.

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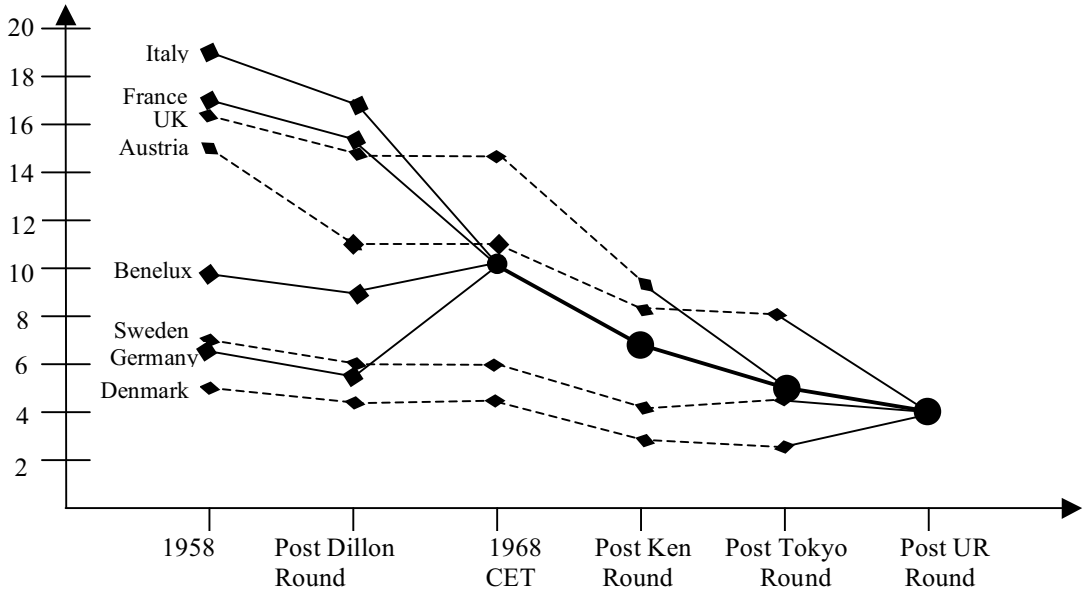
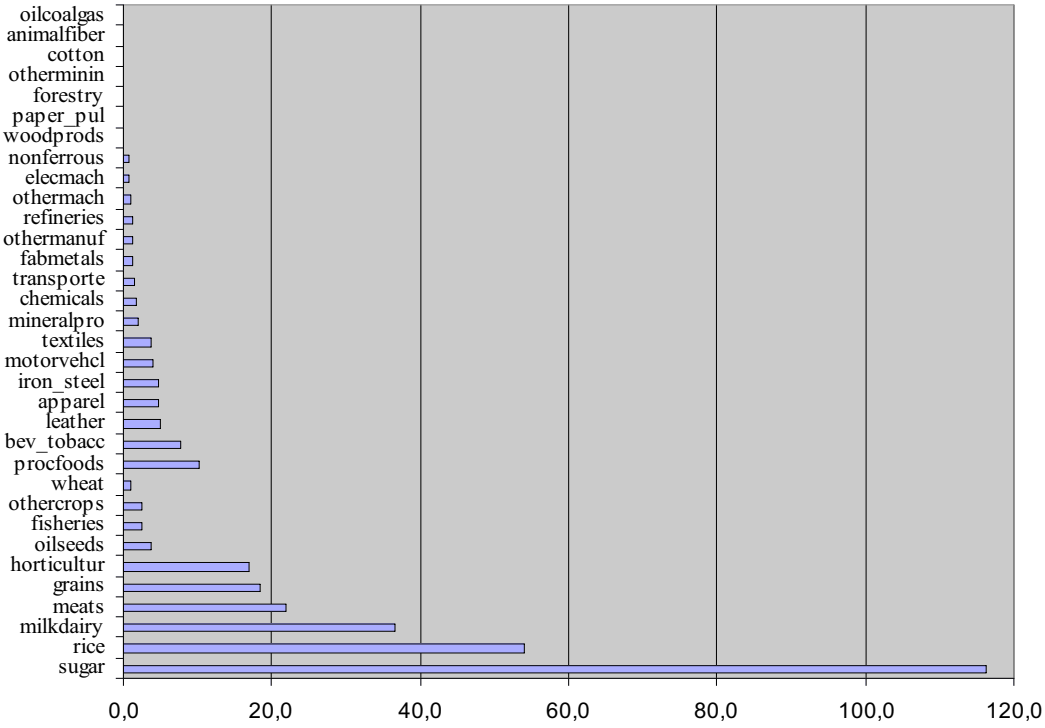
**Figure 1 Evolution of tariffs for selected EU-15 countries**

(Simple Average MFN tariffs for industrial goods)



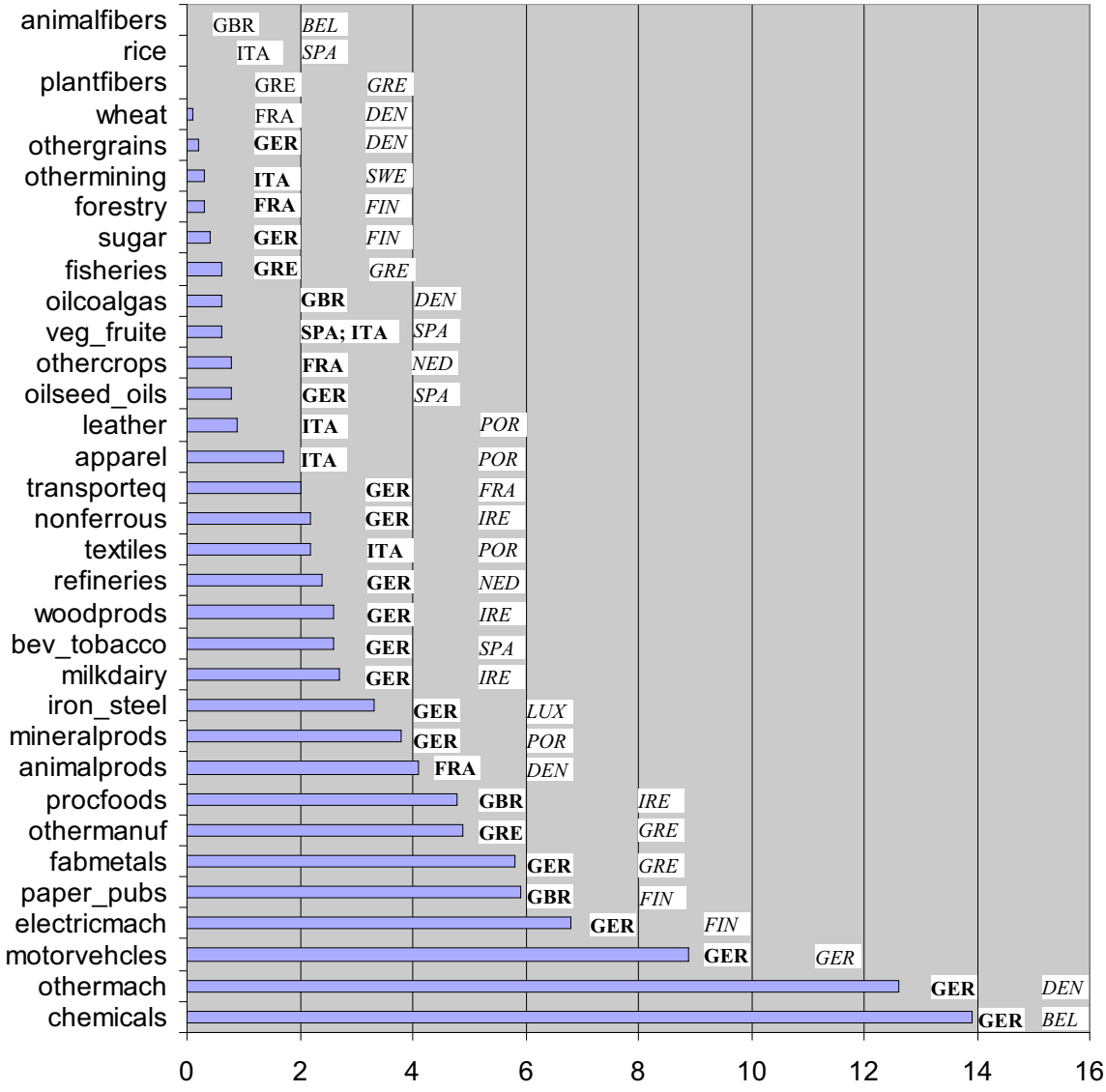

Source: Data from 1958 – Post Kennedy Round, compiled from Resnick and Truman (1975|), p. 63; post-Tokyo Round tariffs from Greenaway, 1983, p. 95, post- UR tariffs from Pelkmans, 2001, p.250.

**Figure 2 EU-15 Tariff Structure 2001**




source: GTAP6 data base

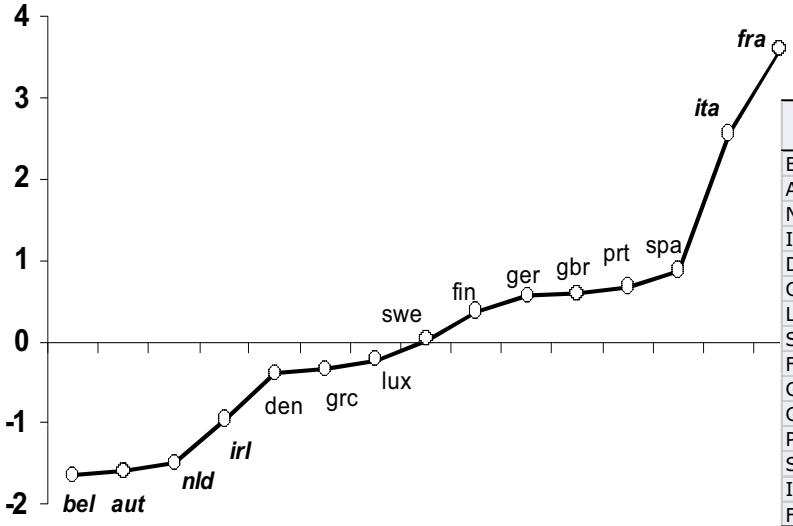
**Figure 3 Shares in total EU-15 agriculture, mining, manufacturing output value**
**Relative importance of sectors for EU-15, 2001**




Source: GTAP6 data base.

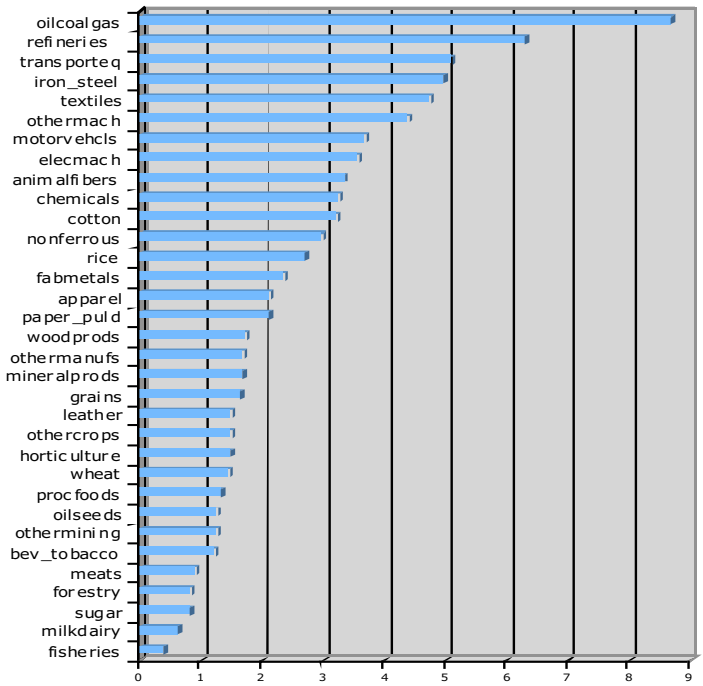
*Countries in bold letters have highest share relative to total EU output in the relevant sector. Those in bold have the highest share for that sector relative to the country's total output (excl. services), compared to other EU-15.*

## Figure 4 National Coefficients




| | national coefficients | |
|---|---|---|
| Belgium | -1,631 | *** |
| Austria | -1,581 | *** |
| Netherlands | -1,489 | *** |
| Ireland | -0,951 | *** |
| Denmark | -0,386 | |
| Greece | -0,332 | |
| Luxemburg | -0,220 | |
| Sweden | 0,030 | |
| Finland | 0,377 | |
| Germany | 0,570 | |
| GreatBritain | 0,598 | |
| Portugal | 0,689 | *** |
| Spain | 0,885 | |
| Italy | 2,564 | *** |
| France | 3,613 | *** |

## Figure 5 Industry Coefficients




OLS R-square:0.9948 ; F:(47,19) 602.9 , 0000;
22 of 33 significant at the 5% of 10% level; all positive weights and hence negative signs for relative weight terms.

**Figure 6**
**Regional policymaker industry coefficients and the rate of protection (logs)**

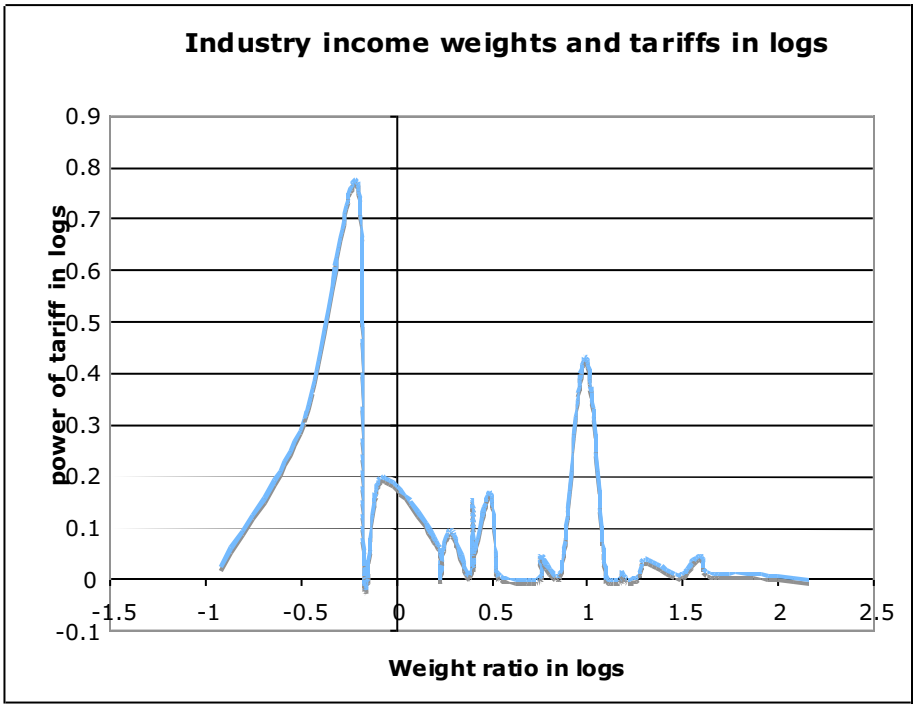
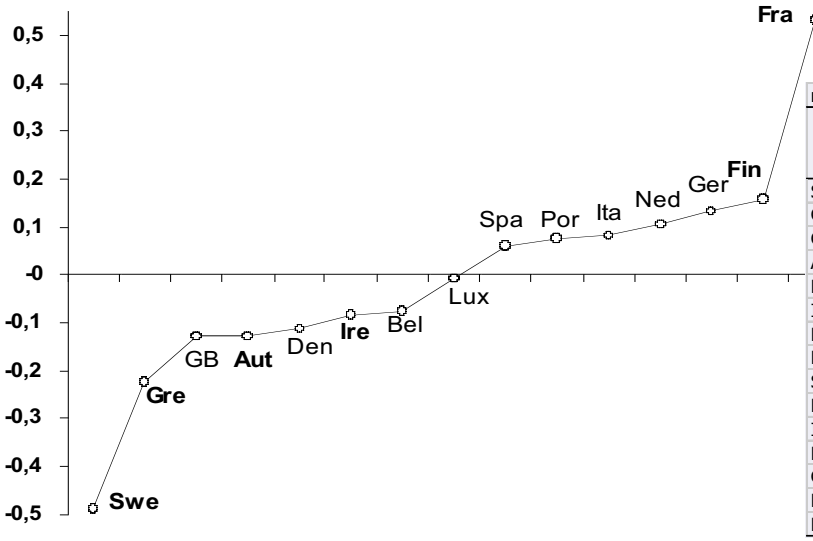



**Figure 7 Marginal Impact of Nationality on EU Industry Weights**
(elasticity based)




| national coefficients | | |
|---|---|---|
| | national coefficients | |
| Sweden | -0,488 | * |
| Greece | -0,224 | |
| GreatBritain | -0,129 | |
| Austria | -0,128 | *** |
| Denmark | -0,113 | *** |
| Ireland | -0,085 | |
| Belgium | -0,077 | |
| Luxemburg | -0,008 | *** |
| Spain | 0,061 | * |
| Portugal | 0,076 | |
| Italy | 0,082 | |
| Netherlands | 0,106 | |
| Germany | 0,132 | |
| Finland | 0,158 | |
| France | 0,530 | *** |

**Table 1 Determinants of tariff protection in EU-15**

| | |
|---|---|
| Year 1997 | 1.398<br>(2.98) |
| Agriculture | 4.283<br>(5.05) |
| Unskilled wages | -0.700<br>(1.12) |
| Sectoral output share | 2.824<br>(4.04) |
| Export orientation | -2.525<br>(1.26) |

OLS R-squared: 0.8601; Robust regression F: 22. .001; T statistics are in brackets

**Table 2**
**Estimated Relative Industry Weights**

| | coefficient | std error 1/ | t-ratio |
|---|---|---|---|
| 1 rice | -2.693 | 2.495 | -1.080 |
| 2 wheat | -1.469 | 2.337 | -0.629 |
| 3 othergrains | -1.634 | 2.491 | -0.656 |
| 4 veg_fruite | -1.492 | 0.776 | -1.921 |
| 5 plantfibers | -3.224 | 1.903 | -1.694 |
| 6 othercrops | -1.495 | 0.618 | -2.418 |
| 7 animalprods | -0.921 | 1.470 | -0.626 |
| 8 animalfibers | -3.351 | 1.556 | -2.154 |
| 9 forestry | -0.845 | 0.353 | -2.393 |
| 10 fisheris | -0.396 | 0.422 | -0.937 |
| 11 oilcoalgas | -8.674 | 5.924 | -1.464 |
| 12 othermining | -1.256 | 1.259 | -0.997 |
| 13 oilseed_oils | -1.264 | 0.637 | -1.983 |
| 14 milkdairy | -0.616 | 1.047 | -0.588 |
| 15 sugar | -0.814 | 0.515 | -1.579 |
| 16 procfoods | -1.328 | 0.934 | -1.422 |
| 17 bev_tobacco | -1.236 | 0.552 | -2.240 |
| 18 textiles | -4.743 | 2.611 | -1.817 |
| 19 apparel | -2.133 | 1.992 | -1.070 |
| 20 leather | -1.505 | 2.035 | -0.740 |
| 21 woodprods | -1.745 | 1.470 | -1.187 |
| 22 paper_pubs | -2.116 | 0.833 | -2.541 |
| 23 refineries | -6.287 | 4.403 | -1.428 |
| 24 chemicals | -3.256 | 0.891 | -3.654 |
| 25 mineralprods | -1.685 | 0.828 | -2.035 |
| 26 iron_steel | -4.960 | 2.252 | -2.202 |
| 27 nonferrous | -2.993 | 1.573 | -1.902 |
| 28 fabmetals | -2.365 | 1.263 | -1.872 |
| 29 motorvehcles | -3.691 | 2.501 | -1.476 |
| 30 transporteq | -5.095 | 1.386 | -3.677 |
| 31 electricmach | -3.562 | 2.108 | -1.690 |
| 32 othermach | -4.388 | 2.315 | -1.896 |
| 33 othermanuf | -1.700 | 1.133 | -1.501 |

1/ robust standard errors.
R-Squared: .99, Z: 602.89, n=66, df=19

**Table 3 Political determinants of industry policy weights**

| | |
|---|---|
| Year 1997 | 0.766<br>(0.88) |
| Agriculture | -0.9830<br>(6.54) |
| Unskilled wages | -0.3542<br>(3.09) |
| Sectoral output share | 0.4370<br>(3.47) |
| Export orientation | 1.7896<br>(4.86) |

OLS R-squared: 0.8150; Robust regression F: 21.18 .000; T statistics are in brackets