True Friends and Enemies of Reforming the Common Agricultural Policy

Glenn W. Harrison and E. E. Rutstrom

GATT Research Paper 92-GATT 8

Center for Agricultural and Rural Development
Iowa State University
Ames, Iowa 50011

Glenn W. Harrison is Dewey H. Johnson Professor of Economics, and E. E. Rutstrom is Assistant Professor, Department of Economics, College of Business Administration, University of South Carolina, Columbia.

This material is based upon work supported by the Cooperative State Research Service, U.S. Department of Agriculture, under Agreement No. 89-38812-4480. Any opinion, findings, conclusions, or recommendations expressed in this publication are those of the author and do not necessary reflect the view of the U.S. Department of Agriculture.

EXECUTIVE SUMMARY

We employ an empirical general equilibrium model of the CAP to determine which factors and countries would be expected to be opposed to or support reform of the CAP. The objective is to determine who the "friends" and "enemies" of the CAP are. The analysis studies the extent to which lobbying activity by these interested parties could be expected to encourage or discourage internal EC reform of the CAP. Several alternative policies to reform the CAP are evaluated in this manner, so as to determine if one or other set of policies has a greater chance of being accepted. Specifically, we study the recent MacSharry proposals for reform, as well as the stated negotiating positions presented at the GATT. The result will be a summary assessment of the relative politico-economic acceptability of these reform proposals within the EC.

Our results lead to a very simple policy conclusion. Given the set of policy packages considered here, there is little doubt that the EC is most inclined to adopt the full MacSharry proposal. This suggests that pushing the U.S. or Helstrom proposals is not likely to lead to EC acceptance unless the EC receives significant compensation from other aspects of the multilateral trade negotiations. If one is just looking for a reform package in agriculture that can be negotiated without consideration of other types of sidepayments then the full MacSharry proposal would have to be the favourite from the EC perspective.

Without further disaggregation of the analysis to identify the U.S. or Japan we can only note that the full MacSharry proposal is the best of the group as far as overall welfare goes for the rest of the world. Of course, agricultural interests in the rest of terh world have a strong preference for the U.S. proposal.

These results also imply that a negotiation stance that called on the EC to implement the "raw" MacSharry proposal without the elaborate scheme of sidepayments that are built into it would be dangerous. It would cause agricultural interests within the EC to change from being supporters of reform to being staunch opponents. Again, in the absence of sidepayments being effected to the EC from other aspects of the overall trade negotiations on non-agricultural matters, one would not encourage dismantling of the sidepayments scheme that is part of the full MacSharry proposal.

Correspondence: E. E. Rutström
Department of Economics
College of Business Administration
University of South Carolina
Columbia, SC 29208, USA
Phone: (803) 777-7400

1. INTRODUCTION

In Harrison and Rutström [1991b] we argued that in the absence of successful international negotiations agricultural reform in the European Community (EC) could be achieved through fairly minor changes in the internal political structure. This is an important insight given the difficulties that the members of the GATT have had in agreeing on agricultural issues both in the Uruguay round and previous negotiations rounds.

This paper explores in more detail the political reality of agricultural reform in the EC. We analyze opposition and support for reform by evaluating the economic payoffs to interest groups in the EC. We pay particular attention to the structure of support and opposition across member countries of the EC.

A number of reform packages for the EC are evaluated. The MacSharry proposal, which was announced by the EC in July, forms the basis of our analysis. In addition we also evaluate the U.S. and Cairns group proposals as well as the Japan and Helstrom proposals.

It is assumed throughout that there is no international strategic interaction in policy making. This issue was one of the focal points of Harrison and Rutström [1991a] [1991b].[1] The focal point here is on the identification of pro-protection and anti-protection groups on a somewhat more detailed level. The interest groups are specified as agriculture and non-agriculture in each of the member countries of the EC. The payoffs to the first set of groups is the real return to country-specific agricultural interests and the payoff to the second is national welfare net of this return to agriculture.

The model employed in the present study is virtually identical to the model employed in Harrison and Rutström [1991]. It is a Computable General Equilibrium model (hereafter CGE model) constructed by Harrison, Rutherford and Wooton [1989] [1990] [1991]. The only difference between this and the earlier model is the regional aggregation. In the model employed here we identify eight of the present EC member countries: Germany, France, Italy, Belgium, the Netherlands, Denmark, the United Kingdom, and Ireland. The model is calibrated to data from 1985.

[1] Also relevant in this regard is the earlier study of agricultural trade wars by Harrison, Rutström and Wigle [1989]. However, we are much more confident in the quantitative model underlying Harrison and Ruststrõm [1991b] with respect to specification of agricultural trade policies and the handling of terms-of-trade effects.

2. MEASURES OF LOBBYING BENEFITS

2.1 True Friends and Enemies

The realization that, even if society as a whole would prefer free trade, some groups in the economy would benefit from protection, was already formalized in the Stolper-Samuelson theorem in the 1940's. This theorem relates changes in commodity prices and changes in factor returns, but has no explicit formulation of lobbying group activities. In a Heckscher-Ohlin economy producing one importable and one exportable good with mobile labor and capital, an increase in the price of the labor-intensive good (x) will increase the wage to labor and decrease the return to capital in terms of both commodity prices. We will thus have

$$\hat{w} > \hat{p}_x > \hat{p}_y > \hat{r} \tag{1}$$

where a ^ indicates percentage change, w is the labor wage, r is the return to capital, and p_x and p_y are the goods prices. Jones [1971] extends these results to a Ricardo-Viner model with sector-specific capital. The relation between commodity prices and factor returns in such a model are

$$\hat{r}_x > \hat{p}_x > \hat{w} > \hat{p}_y > \hat{r}_y$$

From these results we would expect labor in the Heckscher-Ohlin model to desire protection on good x while capital owners would want protection on good y and oppose protection on good x. Similarly in the Ricardo-Viner economy owners of (sector-specific) capital would prefer protection on their own sectors.

In a generalization of the simple *2x2* Heckscher-Ohlin model, Jones and Scheinkman [1977] introduce the terminology of "natural friends" and "natural enemies". A commodity i is a *natural friend* to a factor k if

$$\hat{\pi}_k / \hat{p}_i > 1 \tag{3}$$

where π is used to represent any factor price, be it labor, capital or land. Conversely a commodity i is a *natural enemy* to a factor k if

$$\hat{\pi}_k / \hat{p}_i < 0 \tag{4}$$

From our example (1) above, the labor intensive good is a natural friend to labor while the capital intensive good is a natural enemy to labor and vice versa for capital. In the *nxn* generalized Heckscher-Ohlin model several relationships between factor prices and goods prices may lie in the interval [0,1]. The change in real income of these factors is ambiguous on the basis of the information used to construct natural friendship indicies. Jones and Scheinkman [1977] are able to prove that every factor has at least one natural enemy, but they are not able to prove a similar relationship to natural friends. The usefulness of this approach for a generalized model is clearly limited.

With this background, Lloyd [1987] presents an alternative formulation where agent payoffs are evaluated in terms of indirect utility rather than relative returns. The percentage change in the indirect utility function for household h (where households are defined in terms of ownership of a single factor k, although the theorem easily generalizes to n factors) can be shown to be

$$\hat{V}_k^h = \hat{\pi}_k - \sum_i \phi_i^h \hat{p}_i \tag{5}$$

where V^h is the indirect utility of household h, π_k the price of factor k, ϕ_{ki} is the share of good i in the household budget, and p_i is the price of this good i.

Let V^h_{ik} represent the percentage change in indirect utility to the household owning factor k from a change in the price of good i. Then if

$$\hat{V}_{ki}^h > 0 \tag{6}$$

the commodity is a *true friend* of the household, and if

$$\hat{V}_{ki}^h < 0 \tag{7}$$

the commodity is a *true enemy* of the household. With this terminology it is possible to define the relationship between every factor (household) and commodity unambiguously in a generalized Heckscher-Ohlin or Ricardo-Viner model with interindustry and international flows of intermediate inputs. Lloyd [1987] further shows that every household, as defined above, has at least one *true friend* and at least one *true enemy*, and similarly every commodity has a *true friend* relation with at least one household and a *true enemy* relation with at least one household.[2]

The true friendship index is preferred here to the natural friendship alternative because it is more truly a neo-classical theory founded on accepted utility maximizing principles, even if it implicitly assumes a greater informational burden on the lobbying groups. We assume that, even if it is difficult for a lobbyist to correctly assess the general equilibrium impact on his utility of some reform proposal, that over time he will have acquired certain heuristics that more or less accurately predict the true utility outcome of his actions. Since the true friendship approach requires the estimation of full general equilibrium effects a Computable General Equilibrium (CGE) model of world trade, production and consumption, due to Harrison, Rutherford, and Wooton [1989] [1990] [1991], is employed here.

In evaluating the friendship indexes for the interest groups we concentrated on the real income changes (which are equivalent to the indirect utility changes as we assume homothetic demand) as measures of changes in welfare.

The welfare of society as a whole is given by changes in welfare of the consumers of the country. This is measured in terms of the Equivalent Variation (EV) in benchmark dollar terms (the base year is 1980 in this model, and the benchmark monetary measure is the U.S. dollar). This is a standard measure of changes in welfare for models where consumers are homogeneous within each country.

The welfare of agricultural interests is measured by looking at the *change in the real income of a household that derives it's income solely from agriculture.* Specifically, let agricultural land and capital be specific to agriculture with no useful employment in any other sector. Whenever there is some policy change there will be some change in the return to these factors, invariably reflecting the fate of the sector to which it is specific. Thus a decline in agricultural production will typically result in a decline in the relative price of factors specific to agriculture. The real income of the household owning this factor is then calculated by deflating with the change in the cost of living.[3]

[2] However, if none of the factors classified as true friends is employed elsewhere in the economy and, in addition, there is no intermediate demand for this good, the existence of true enemies for this factor is not guaranteed.

[3] In our model there is only one consumer in each country, thus there is only one cost of living index in each country. The change in the price of the specific factor, as well as the cost of living, are denominated in terms of some (arbitrary) numeraire good.

It is perfectly possible for the return to the factor to decline but for the real income of the household owning the factor to increase; this would occur if the cost of living dropped by a greater percentage than the return to the factor.

In the CGE model that we employ there are two sectors that are "agricultural" in the broad sense used here. One is called AGR and refers to primary agricultural production. The other sector is called FOO and refers to food products. It is appropriate to consider these two jointly since much of the trade in agricultural goods occurs after they have been processed to some extent and hence are treated statistically as food products. In effect we are assuming that these two sectors coordinate their political lobbying activities perfectly. Given that we change the levels of protection afforded their sectors equally, this assumption is plausible enough.[4]

2.2 Uncertainty About Payoffs

Like any numerical simulation model, our GE model is calibrated to particular values of certain parameters that may or may not be reliable estimates of the "true value". Recognizing this fact, it is becoming common in policy applications of such models to undertake a systematic sensitivity analysis of results, at least with respect to the elasticity specifications adopted. We conduct a sensitivity analysis using the statistical procedures developed by Harrison and Vinod [1991].[5] Appendix A details the particular distributional assumptions that we have made in this analysis.

The upshot of running such a sensitivity analysis is that we generate a *distribution of solution values* for any particular counter-factual policy simulation. In other words, if the EC dismantles the CAP we would be able to say something such as "the mean change in the objective function value in the EC is $x\%$, with a standard deviation of $y\%$". We can also make statements as to the reliability of a qualitative result. For example, we can say such things as "the probability of an improvment in the EC government objective in the EC from dismantling the CAP is $z\%$". Such statements reflect the intrinsic uncertainty about the particular empirical model underlying the

[4] We assume away issues of the "endogenous structure" of trade policies. If such issues were addressed it would not be appropriate to assume that the interests of the two sectors coincide perfectly.

[5] An appendix to Harrison and Rutström [1991b] details the particular distributional assumptions that we have made in this analysis.

simulations.

How are we to deal with the uncertainty over the model's results? Expected utility theory provides a natural answer to this question. We know how to evaluate the utility (or payoffs) to each agent. Now we must extend that calculation to allow for the fact that different elasticities will result in the same model giving different payoffs for the same counterfactual policy simulation. Expected utility theory assumes that the expected utility of some uncertain outcome is just the probability-weighted average utility of the utilities associated with each outcome.

To be specific, assume that we just try two sets of elasticities, called High and Low for convenience, and one counterfactual policy simulation, such as the dismantling of the CAP. Assume hypothetically that the payoff to the EC is 1.44 if elasticities are Low and 2.22 if they are High. If there is a 65% chance of the elasticities being Low and only a 35% chance of them being High, then the expected utility of this uncertain prospect to the EC is just $0.65(1.44)+0.35(2.22) = 0.936+0.777 = 1.713$.

Our sensitivity analysis undertakes a calculation of this kind over more than two sets of elasticities. In fact our sample sizes for each policy proposal is over 1000. The simple logic of the above expected payoff calculation is just the same, however.

It should be noted that we employ prior probabilities for the different sets of elasticities that reflect our knowledge about these estimates, rather than always assuming diffuse priors. As such the sensitivity analysis does involve greater weight being given to elasticity values that are *a priori* more likely to be observed. We thereby constrain the range of counterfactual policy results to be consistent with elasticity values that are *uncertain but not unrealistic*. For example, our sensitivity analysis is much more likely to pick a value for an elasticity drawn from a Normal distribution within one standard deviation of the mean than it is to pick a value between one and two standard deviations from the mean. The objective is not to "let anything happen", but just to provide an honest assessment of the intrinsic uncertainty surrounding numerical calculations such as those employed here.[6]

[6] This may seem to be a minor point, but we are aware of many instances in policy applications of models such as these in which authors have not constrained their elasticity specifications to realistic values, and managed to find that a given policy can have virtually any qualitative effect. Such analyses have led many people to avoid the use of sensitivity analysis on the false grounds that it *necessarily* involves drawing indeterminate policy conclusions.

3. MODELING THE REFORM PROPOSALS

3.1 The EC Proposal

The EC position regarding agricultural reform has changed substantially since October 1990 when the draft proposals were tabled. The earlier proposal was based on an average support reduction of 30% expressed by an Aggregate Measure of Support, some tariffications of border measures and adjustments of export restitutions. The present proposal, which was released on July 9, 1991, is based on Agriculture Commissioner Ray MacSharry's proposal. Recognizing the unfairness of the price support approach, the growing stock-piles of surplus production, and the EC budgetary position, the proposal includes price reductions, supply control measures, and assistance to small producers.

The primary sector targeted for price reduction is cereal production. A 42% cut in cereal support prices over three years is proposed. There will, however, also be a program of compensation payments to producers, but these payments will be conditional on a 15% set-aside for producers with more than 20 hectars. For farmers with over 50 hectars the compensation is based on a 50 hectar farm. Similar price reductions are proposed in the dairy sector, with 10% for milk, 15% for butter, and 5% for skim milk powder. In addition the milk quotas will be lowered by 6%, with some flexibility in the scheme to provide for dairy holdings in less favored areas. Compensation would be paid to farmers with reduced quotas. The price reductions on butter and skim milk powder are set to approximate the cost reductions due to reduced prices of cereals and feed concentrates.

The final proposed price change is a 15% cut for beef. 10% of this reflects an approximate cost reduction due to lower feed prices.

The proposal is clearly an attempt to align Community farm prices with the world market level and tackle the problem of overproduction. The proposal falls short of that given by the U.S., however, even if it can be considered an improvement on the earlier EC position.

3.2 The U.S. Proposal

The US proposal was submitted in October 1990 and calls for the "tariffication" of all non-tariff barriers and a gradual reduction of these and other tariffs by an average of 75 percent over 10 years with a final ceiling rate not to exceed 50 percent. Minimum access commitments for products currently subject to non-tariff import barriers would be set and expanded by 75% over 10 years using a tariffrate quota transitional mechanism. Snap back arrangements would be available, and particular concerns of developing countries would be dealt with.

Export subsidies on primary agricultural products would be reduced by 90 percent over a 10 year period. Export subsidies of processed agricultural products would be phased out in six years. Voluntary programs funded solely by producers would be excluded, however. Food aid to developing countries would also by excluded.

Trade-distorting internal support measures would be reduced by 75 percent over 10 years. These support measures include market price support, direct payments, and reductions in input, investment, and marketing cost which are exclusive to agriculture. Reductions will be based on Aggregate Measures of Support (AMS) that are expressed as the total monetary value of support. These AMS would also be augmented to reflect resource set-aside policies. Concerns particular to developing countries would be dealt with, although permanent exceptions would not be allowed.

3.3 Other Proposals

The proposal tabled by the Cairns group[7] is similar in its broad measures to that of the U.S. It calls for reductions in internal support and tariffs by 75% and reductions in export subsidies by 90%.

The Japan proposal and chairman Helstroms proposals are similar in magnitude. They both call for 30% reductions in internal support. Japan proposes the elimination of import quotas and reductions in tariffs based on the changes implemented by Japan in the Tokyo Round. Chairman Helstroms proposal specifies a 30% reduction both in border protection and in export assistance.

3.4 Modelling the Proposals

Three policy simulations are modelled in this paper. The first is based on the MacSharry proposal and

[7] The Cairns group of countries include Argentina, Australia, Brazil, Chile, Colombia, Hungary, Indonesia, Malaysia, New Zealand, Philippines, Thailand, and Uruguay.

TABLE 1	
Shares of total agricultural output (percent)	
wheat	6.6
rye	0.2
oats	0.1
barley	2.2
maize	2.0
rice	0.3
oilseeds	2.1
total cereals and oilseeds	13.5
milk	18.5
beef	13.5
Source: The Agricultural Situation Report [1990], Table 3.1.1.	

reduces the intervention and threshold prices for agriculture and food by a weighted average of the proposed sector-specific reductions. Table 1 shows the share of cereals and oilseed production of the total agricultural output according to the Agricultural Situation Report of 1990. Also shown is the share of beef and milk. Cereal production falls into our model sector AGR and beef and milk into our model sector FOO, the sectoral disaggregation of the model does not therefore fully coincide with that of the Agricultural Situation Report. The distributive shares presented in table 1 will therefore be interpreted as being the shares across the aggregation of AGR and FOO. The 42% reduction in cereals prices will be weighted by the share of cereals in total agricultural output multiplied by the share of AGR in the model aggregation of AGR and FOO. This weighted reduction in cereals prices will then be applied to model sector AGR. Simularly, the 15% reduction in beef prices and the 10% reduction in milk prices will be weighted by their respective shares in total agricultural output multiplied by the share of FOO in the model aggregation of AGR and FOO. This weighted price reduction of beef and milk will then be applied to model sector FOO. The resulting reductions in support prices for sector AGR is 2.6% and for sector FOO is 2.2%. This reduces all support prices to levels below the benchmark international price, and reflects the goal of the proposal to make the support price constrains non-binding.

TABLE 2

Shares of landendowment in medium (20-50 ha) and large (>50 ha) farms. Percent.

	all farms	thereoff cereal farms
Germany	70.1	10.3
France	86.5	21.6
Italy	49.4	11.7
Netherlands	67.3	1.5
Belgium	67.6	5.3
United Kingdom	95.0	18.5
Denmark	84.9	14.6
Ireland	74.3	4.9

Source: The Agricultural Situation Report [1990], Table 3.5.4.1. Acreage reported is percent of total Utilized Agricultural Area. The cereal share is based on output and not on land. The Agricultural Situation Report [1990], Table 3.1.1.

Set-asides are calculated based on the information supplied in Table 2. This table illustrates the share of each country's land endowment that corresponds to medium and large scale farms. This is then the percentage of the hectarage that falls under the set-aside requirements. The second column shows a proxy for the percentage of land that is under cereal cultivation. This proxy is the percentage of all agricultural output that is cereal output.[8] 15% of the cereal hectarage on large and medium scale farms are for set-aside. For simplicity in the modelling it is assumed that all farmers choose to do the set-asides in order to receive compensation payments. In addition, it is assumed that this land will not be used for any other agricultural (or other) production. The resulting changes in land endowments are listed in appendix B.

The compensation scheme modelled here is decoupled in the sense that it is based on the historic income

[8]This proxy suffers from the implicit assumption that yields are the same independent of crop. This is only a serious shortcoming with respect to distributional analysis if the ratios of yields across crops differs dramatically across countries.

of farmers. This is equivalent to assuming a fixed hectarage and a fixed yield as the base for compensation payments. No single country gets full compensation for its income losses in this model. Distributional aspects arise because there is under-compensation of differing degrees across countries. First, large farms do not receive any compensation on the hectarage exceeding 50 ha. Countries with a larger share of large farms will therefore be under-compensated to a larger degree. In addition, small farms do not need to set aside land in order to qualify for compensation payments. Countries with a large share of small farms will consequently get closer to full compensation than countries with a small share of small farms. Additional distributional concerns are caused by the fact that the definition of small and large farms with respect to set-asides and compensation in the McSharry proposal differ across countries depending on average yield. This is not captured in the present model, where small farms are defined as <20 ha and large farms as >50 ha.

We evaluate two types of compensation schemes. In the first land under set-aside that qualify for compensation in our model only gets compensated for the income loss due to the lower market price and not for the entire income loss due to the smaller hectarage.

The compensation package is modelled according to the share of large to smaller farms in each country. A country with a large share of small farmers (less than 20 ha) will receive a proportionally larger part of the total compensation payments than a country with only medium and large farms. The compensation is calculated according to the following formula:

$$C = (\alpha_1 + \alpha_2 + \alpha_3 \cdot \beta) \cdot C_e$$

The compensation paid to a country (C) is a share of the total expected loss to farmers (C_e), where the share is determined by the share of small farms (less than 20 ha) located in the country (α_1), the share of middlesized farms (20 - 50 ha) located in the country (α_2) and the share of large farms (α_3) multiplied by an adjustment factor (β) that is simply the ratio of the size of the largest acreage for which compensation is being paid (50 ha) to the average size of large farms in the country. Table 3 shows the parameter values. The expected income loss is calculated net of cost reductions in intermediate inputs. These calculations are documented in appendix B.

Countries with large farms therefore gets less compensation in relation to their true income loss. This

TABLE 3				
Parameters for compensation calibration				
Germany	29.9	43.3	26.8	64.1
France	13.5	34.4	52.1	56.4
Italy	50.6	17.9	31.5	39.9
Netherlands	32.6	47.7	19.6	65.6
Belgium	32.4	41.8	25.8	65.4
United Kingdom	5.0	12.2	82.8	29.2
Denmark	15.2	38.7	46.2	57.3
Ireland	25.7	41.2	33.1	60.0

Source: The Agricultural Situation Report [1991]. Details provided in appendix B.

version of out modelling of compensation payments is therefore biased in favor of countries with a large share of small farms. We therefore expect countries like Germany, the Netherlands, and Belgium to become better compensated for their losses than countries like the UK, France, and Denmark.

In the alternative version of modelling compensation payments, farmers with land set-asides get an additional compensation due to the fact that nothing is produced on this land. These payments are simply the gross earnings at the new intervention prices. Table 4 shows the compensation payments modelled under the two schemes.

A simplifying assumption in the present model is that compensation payments are not calculated endogenously, based on the actual fall in cereals prices, but exogenously, based on the entire drop in support prices. To this extent compensation payments are probably overestimated. Also, any disincentives to participate in the program by not fulfilling the set-aside requirements has for ease of modelling been assumed away. Compensation payments will also be overestimated to the extent that the actual hectarage in cereals and oilseeds might decline in addition to any set-aside fulfillments causing a drop in compensation that is not captured with our ex ante approach to calculating compensation payments. There is no reason to expect any of these simplifying assumptions to have any significant influence on distributional rankings, however.

TABLE 4

Compensation payments in the MacSharry proposal

	Scheme 1	Scheme 2
Germany	1.97221	2.34366
France	1.74799	2.83771
Italy	1.53163	1.76434
Netherlands	0.59214	0.60844
Belgium	0.31240	0.34110
United Kingdom	0.57920	0.79716
Denmark	0.25098	0.34318
Ireland	0.14596	0.16478
Total	7.13251	9.20037

Source: See appendix B.

The second policy simulation to be modelled is based on the U.S. proposal. It will decrease *ad valorem* tariffs and production subsidies exogenously by 75% and export subsidies by 90% for the EC. The third and final policy simulation is simply a 30% exogenous reduction in all *ad valorem* tariffs, export subsidies, and production subsidies.

4. RESULTS

Tables 5 through 9 display the basic results of our analysis. For each policy they report descriptive statistics for each of the true friendship indicies. These statistics are based on the distribution of solution values that emerges from our systematic sensitivity analysis. In each case we report the mean, the median, the standard deviation, andthe probability of a positive value.[9] For present purposes it is sufficient to just focus on the mean and probability of a positive value.[10]

The general results are quite clear. The "raw" MacSharry proposal with no compensation scheme (Table 5) has nothing but enemies within EC agriculture. Each and every EC nation has agricultural interests that would strongly oppose the proposal. Italy and Germany that have large shares of small farmers and therefore proportionately less set-aside requirements, have the least to lose. All of the non-Agricultural interest groups within the EC would be supportive of the proposal, as might be expected. On balance the staunch opposition of the agricultural lobby would not overcome the support for the proposal from non-agricultural interests (assuming, of course, that these two lobby groups received equal weight from government in terms of policy influence). Ireland is the only country that is a net loser, as measured by the EV.

Matters are quite different when we augment the "raw" MacSharry proposal with the sidepayments that are part of it. Consider first the effects of adding sidepayments to compensate for the expected decreases in agricultural prices (Table 6). This modification serves to shift agricultural interests in Germany, France, Italy, the Netherlands, Belgium and Ireland from being staunch enemies of the proposal to being supporters. The United Kingdom and Denmark remain enemies of the proposal in this form. These are then the only two countries that are under-compensated in the sense that many large farmers do not receive full compensation for the price drop and the set-asides. With side-payments that compensate for the gross income loss on set-aside land in addition to the price fall (table 7), only agriculture in the United Kingdom remains as an enemy to the proposal. This is not

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[9] These statistics are calculated using numerical procedures developed by Press, Flannery, Teukolsky and Vetterling [1986] and implemented in Sprott [1991]. An appendix lists the software developed to undertake these calculations.

[10] These distributions tend to be non-Gaussian, as indicated by Skewness and Kurtosis statistics reported in Appendix C. The samples sizes in these tables are 3029, 3866, 1749, 4590 and 4467, respectively. For this reason we urge readers to avoid using the reported standard deviations and means to mentally construct a "t-test impression" of the statistical significance of the reported friendship index.

Table 5: True Friends and Enemies of the MacSharry Proposal Without Sidepayments

Factor	Mean	Median	Std.Dev.	Probability
Ag_Germany	-3.07	-3.066	0.253	0
Ag_France	-4.049	-4.048	0.069	0
Ag_Italy	-2.657	-2.644	0.195	0
Ag_Netherl.	-6.096	-6.096	0.059	0
Ag_Belgium	-3.991	-3.981	0.195	0
Ag_UK	-6.565	-6.556	0.15	0
Ag_Denmark	-7.436	-7.43	0.112	0
Ag_Ireland	-3.711	-3.699	0.158	0
Ag_Spain	-0.235	-0.234	0.025	0
Ag_Portugal	-0.171	-0.17	0.018	0
Ag_ROW	0.177	0.171	0.036	1
NonAg_Germany	1.046	1.046	0.024	1
NonAg_France	1.04	1.04	0.023	1
NonAg_Italy	0.748	0.748	0.019	1
NonAg_Netherl.	0.649	0.649	0.014	1
NonAg_Belgium	0.453	0.453	0.01	1
NonAg_UK	0.936	0.936	0.019	1
NonAg_Denmark	1.968	1.969	0.057	1
NonAg_Ireland	0.215	0.214	0.023	1
NonAg_Spain	-0.048	-0.048	0.002	0
NonAg_Portugal	-0.056	-0.055	0.003	0
NonAg_ROW	-0.258	-0.249	0.052	0
EV_Germany	0.872	0.871	0.026	1
EV_France	0.755	0.756	0.023	1
EV_Italy	0.561	0.561	0.017	1
EV_Netherl.	0.291	0.291	0.013	1
EV_Belgium	0.279	0.279	0.009	1
EV_UK	0.72	0.72	0.019	1
EV_Denmark	1.382	1.383	0.051	1
EV_Ireland	-0.184	-0.184	0.008	0
EV_Spain	-0.064	-0.065	0.001	0
EV_Portugal	-0.069	-0.069	0.002	0
EV_ROW	-0.001	-0.001	0	0

surprising given the size structure of agriculture in the U.K. as presented earlier in table 3. With a very small share

Table 6: True Friends and Enemies of the MacSharry Proposal With Sidepayments for Price Declines (Scheme 1)

Factor	Mean	Median	Std.Dev.	Probability
Ag_Germany	3.988	4.017	0.253	1
Ag_France	1.51	1.512	0.069	1
Ag_Italy	3.678	3.698	0.201	1
Ag_Netherl.	1.219	1.219	0.066	1
Ag_Belgium	1.781	1.781	0.194	1
Ag_UK	-2.512	-2.5	0.142	0
Ag_Denmark	-0.619	-0.614	0.098	0
Ag_Ireland	2.001	2.01	0.157	1
Ag_Spain	-0.235	-0.235	0.026	0
Ag_Portugal	-0.171	-0.168	0.018	0
Ag_ROW	0.178	0.173	0.036	1
NonAg_Germany	0.712	0.713	0.024	1
NonAg_France	0.683	0.684	0.022	1
NonAg_Italy	0.534	0.534	0.019	1
NonAg_Netherl.	0.486	0.486	0.015	1
NonAg_Belgium	0.364	0.364	0.01	1
NonAg_UK	0.622	0.622	0.019	1
NonAg_Denmark	1.233	1.233	0.057	1
NonAg_Ireland	0.263	0.261	0.021	1
NonAg_Spain	-0.048	-0.048	0.002	0
NonAg_Portugal	-0.056	-0.056	0.003	0
NonAg_ROW	-0.26	-0.253	0.052	0
EV_Germany	0.852	0.852	0.026	1
EV_France	0.729	0.731	0.023	1
EV_Italy	0.707	0.707	0.018	1
EV_Netherl.	0.525	0.525	0.014	1
EV_Belgium	0.419	0.419	0.009	1
EV_UK	0.532	0.532	0.019	1
EV_Denmark	1.117	1.117	0.051	1
EV_Ireland	0.44	0.439	0.007	1
EV_Spain	-0.064	-0.065	0.001	0
EV_Portugal	-0.07	-0.07	0.002	0
EV_ROW	-0.001	-0.001	0	0

of small farmers and large farmers on average exceeding the maximum compensation acreage, only about 40% of the expected farming income loss will be compensated. All other countries get compensations of about 80-90% of the expected income loss.

The non-agricultural groups, as expected would favor the uncompensated version of the MacSharry proposal, but remain favorable to the proposal even with sidepayments. The changes in national friendship towards the proposal is less sensitive to sidepayments, but the uncompensated version remains superior.

The returns to non-agricultural groups dominate the returns to the agricultural groups, with the result that aggregate national efficiency is maximized without any of the sidepayment schemes. However, the benefits of liberalizing support prices greatly outweights any efficiency loss due to income redistribution in the sidepayments. For all three alternatives of the MacSharry proposal investigated here, the net national gain is always positive, with the exception of Ireland without sidepayments.

Turning to the U.S. proposal (Table 8), we can easily see why it was met with such stiff resistance within the EC. Agricultural interests in every EC[11] nation are strongly opposed to it. Moreover, even non-agricultural interests are generally better off with any variant of the MacSharry proposal (Tables 5, 7 and 7) than with the U.S. proposal. The overall national gains within the EC are much more uncertain with the U.S. proposal than with the full MacSharry proposal. Italy and Belgium are uncertain, as a nation, as to whether or not they should support the package, and Italy, Denmark and Ireland are clearly opposed. Only Germany, France, and the United Kingdom would support the U.S. proposal at the national level.

Virtually identical comments apply to the Helstrom proposal (Table 9). It is clearly less attractive to agricultural interests within the EC than the full MacSharry proposal.

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[11] Recall that Spain and Portugal are not included in our model of the EC, since it is calibrated to 1985. Thus one could well say that *every* EC nation is opposed to the U.S. proposal.

Table 7: True Friends and Enemies of the U.S. Proposal

Factor	Mean	Median	Std.Dev.	Probability
Ag_Germany	-5.391	-5.38	0.254	0
Ag_France	-5.836	-5.823	0.254	0
Ag_Italy	-4.461	-4.453	0.166	0
Ag_Netherl.	-9.725	-9.719	0.302	0
Ag_Belgium	-7.449	-7.432	0.366	0
Ag_UK	-8.681	-8.67	0.346	0
Ag_Denmark	-11.434	-11.436	0.228	0
Ag_Ireland	-6.881	-6.863	0.369	0
Ag_Spain	4.361	4.335	0.344	1
Ag_Portugal	3.343	3.321	0.266	1
Ag_ROW	1.565	1.476	0.402	1
NonAg_Germany	0.466	0.465	0.012	1
NonAg_France	0.413	0.412	0.013	1
NonAg_Italy	0.259	0.259	0.01	1
NonAg_Netherl.	0.181	0.181	0.015	1
NonAg_Belgium	0.303	0.302	0.017	1
NonAg_UK	0.302	0.302	0.011	1
NonAg_Denmark	0.111	0.111	0.01	1
NonAg_Ireland	0.076	0.073	0.041	0.988
NonAg_Spain	-0.305	-0.302	0.037	0
NonAg_Portugal	-0.438	-0.435	0.039	0
NonAg_ROW	-2.303	-2.175	0.58	0
EV_Germany	0.217	0.217	0.004	1
EV_France	0.064	0.064	0.003	1
EV_Italy	-0.001	0	0.003	0.358
EV_Netherl.	-0.345	-0.344	0.004	0
EV_Belgium	-0.001	-0.001	0.004	0.494
EV_UK	0.043	0.043	0.003	1
EV_Denmark	-0.609	-0.609	0.009	0
EV_Ireland	-0.632	-0.632	0.004	0
EV_Spain	0.115	0.116	0.003	1
EV_Portugal	0.001	0.002	0.008	0.622
EV_ROW	-0.018	-0.018	0	0

Table 8: True Friends and Enemies of the Helstrom Proposal

Factor	Mean	Median	Std.Dev.	Probability
Ag_Germany	-5.392	-5.377	0.256	0
Ag_France	-5.83	-5.82	0.247	0
Ag_Italy	-4.462	-4.456	0.164	0
Ag_Netherl.	-9.719	-9.713	0.299	0
Ag_Belgium	-7.443	-7.423	0.359	0
Ag_UK	-8.669	-8.654	0.34	0
Ag_Denmark	-11.434	-11.434	0.228	0
Ag_Ireland	-6.876	-6.851	0.365	0
Ag_Spain	4.357	4.323	0.347	1
Ag_Portugal	3.348	3.328	0.267	1
Ag_ROW	1.575	1.493	0.396	1
NonAg_Germany	0.466	0.465	0.012	1
NonAg_France	0.413	0.412	0.013	1
NonAg_Italy	0.259	0.259	0.01	1
NonAg_Netherl.	0.181	0.181	0.015	1
NonAg_Belgium	0.303	0.302	0.017	1
NonAg_UK	0.301	0.301	0.01	1
NonAg_Denmark	0.112	0.111	0.01	1
NonAg_Ireland	0.075	0.073	0.041	0.99
NonAg_Spain	-0.304	-0.301	0.038	0
NonAg_Portugal	-0.439	-0.436	0.039	0
NonAg_ROW	-2.318	-2.199	0.571	0
EV_Germany	0.217	0.217	0.004	1
EV_France	0.064	0.064	0.003	1
EV_Italy	-0.001	-0.001	0.003	0.33
EV_Netherl.	-0.345	-0.344	0.004	0
EV_Belgium	-0.001	-0.001	0.004	0.478
EV_UK	0.043	0.043	0.003	1
EV_Denmark	-0.609	-0.609	0.009	0
EV_Ireland	-0.632	-0.632	0.004	0
EV_Spain	0.115	0.116	0.003	1
EV_Portugal	0.001	0.002	0.008	0.609
EV_ROW	-0.018	-0.018	0	0

5. CONCLUSIONS

These results lead to a very simple policy conclusion. Given the set of policy packages considered here, there is little doubt that the EC is most inclined to adopt the full MacSharry proposal. This suggests that pushing the U.S. or Helstrom proposals is not likely to lead to EC acceptance unless the EC receives significant compensation from other aspects of the multilateral trade negotiations. If one is just looking for a reform package in agriculture that can be negotiated without consideration of other types of sidepayments then the full MacSharry proposal would have to be the favourite from the EC perspective.

Without further disaggregation of the analysis to identify the U.S. or Japan we can only note that the full MacSharry proposal is the best of the group as far as overall welfare goes for the rest of the world. Of course, agricultural interests in the rest of the world have a strong preference for the U.S. proposal.

These results also imply that a negotiation stance that called on the EC to implement the "raw" MacSharry proposal without the elaborate scheme of sidepayments that are built into it would be dangerous. It would cause agricultural interests within the EC to change from being supporters of reform to being staunch opponents. Again, in the absence of sidepayments being effected to the EC from other aspects of the overall trade negotiations on non-agricultural matters, one would not encourage dismantling of the sidepayments scheme that is part of the full MacSharry proposal.

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APPENDIX A: COMPUTER SOFTWARE

This appendix documents the software that has been developed to undertake the calculations reported in the text. The program itself is listed below, along with a sample of the ASCII configuration files used to invoke particular cases. The generation of the general equilibrium model file, with the suffix MPS, is described in the appendix to our companion paper [1991b]. That appendix also documents the procedures used to generate a systematic sensitivity analysis of the model with respect to elasticities. For present purposes we will simply assume that the analyst has generated a "results" file, with the suffix RES, using the sensitivity analysis software.

The program FR.BAS reads in this results file and calculates the necessary true friendship indicies. The results file contains all of the necessary data on changes in prices. The WEIGHTS.CNF file lists the benchmark data on endowments of all factors. It has essentially the same structure as the WEIGHTS.CNF file documented in our earlier paper. In the present case, however, there are more regions than before. This file is as follows:

```
EV_GER       658.74  0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0
EV_FRA       0.0     562.53  0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0
EV_ITA       0.0     0.0     440.67  0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0
EV_NET       0.0     0.0     0.0     149.15  0.0     0.0     0.0     0.0     0.0     0.0     0.0
EV_BEL       0.0     0.0     0.0     0.0     138.18  0.0     0.0     0.0     0.0     0.0     0.0
EV_UKI       0.0     0.0     0.0     0.0     0.0     507.74  0.0     0.0     0.0     0.0     0.0
EV_DEN       0.0     0.0     0.0     0.0     0.0     0.0     61.32   0.0     0.0     0.0     0.0
EV_IRE       0.0     0.0     0.0     0.0     0.0     0.0     0.0     25.37   0.0     0.0     0.0
EV_SPA       0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     257.60  0.0     0.0
EV_POR       0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     41.57   0.0
EV_ROW       0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     1119.65
Agr_K_GER    5.1175  0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0
Agr_K_FRA    0.0     7.1953  0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0
Agr_K_ITA    0.0     0.0     5.2703  0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0
Agr_K_NET    0.0     0.0     0.0     1.5187  0.0     0.0     0.0     0.0     0.0     0.0     0.0
Agr_K_BEL    0.0     0.0     0.0     0.0     0.8901  0.0     0.0     0.0     0.0     0.0     0.0
Agr_K_UKI    0.0     0.0     0.0     0.0     0.0     1.9797  0.0     0.0     0.0     0.0     0.0
Agr_K_DEN    0.0     0.0     0.0     0.0     0.0     0.0     0.8533  0.0     0.0     0.0     0.0
Agr_K_IRE    0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.6397  0.0     0.0     0.0
Agr_K_SPA    0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     4.3319  0.0     0.0
Agr_K_POR    0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.9258  0.0
Agr_K_ROW    0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     124.972
Food_K_GER   12.674  0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0
Food_K_FRA   0.0     10.312  0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0
Food_K_ITA   0.0     0.0     8.1351  0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0
Food_K_NET   0.0     0.0     0.0     3.3554  0.0     0.0     0.0     0.0     0.0     0.0     0.0
Food_K_BEL   0.0     0.0     0.0     0.0     2.7444  0.0     0.0     0.0     0.0     0.0     0.0
Food_K_UKI   0.0     0.0     0.0     0.0     0.0     8.8646  0.0     0.0     0.0     0.0     0.0
Food_K_DEN   0.0     0.0     0.0     0.0     0.0     0.0     1.3149  0.0     0.0     0.0     0.0
Food_K_IRE   0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.6770  0.0     0.0     0.0
Food_K_SPA   0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     9.2078  0.0     0.0
Food_K_POR   0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     1.8481  0.0
Food_K_ROW   0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     258.174
Agr_Lnd_GER  10.1923 0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0
Agr_Lnd_FRA  0.0     13.9367 0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0
Agr_Lnd_ITA  0.0     0.0     10.8614 0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0
Agr_Lnd_NET  0.0     0.0     0.0     3.0389  0.0     0.0     0.0     0.0     0.0     0.0     0.0
Agr_Lnd_BEL  0.0     0.0     0.0     0.0     1.7802  0.0     0.0     0.0     0.0     0.0     0.0
Agr_Lnd_UKI  0.0     0.0     0.0     0.0     0.0     3.7785  0.0     0.0     0.0     0.0     0.0
Agr_Lnd_DEN  0.0     0.0     0.0     0.0     0.0     0.0     1.6573  0.0     0.0     0.0     0.0
Agr_Lnd_IRE  0.0     0.0     0.0     0.0     0.0     0.0     0.0     1.2651  0.0     0.0     0.0
Agr_Lnd_SPA  0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     9.6419  0.0     0.0
```

```
Agr_Lnd_POR     0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   2.0606  0.0
Agr_Lnd_ROW     0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0     278.1640
Pol_weight      0.5   0.5   0.5   0.5   0.5   0.5   0.5   0.5   0.5   0.5     0.5

*          EC     US

* In this file enter on each row the name of the lobbyist, then the
* ENDOWMENT weights for each of the lobbyists. Finally, in the last row
* enter the POLITICAL weight for the agricultural lobbyist (alpha).
* Enter zeroes for all other lobbyists. Each column refers to a country
* in which lobbying is occuring. This format allows much more general
* lobbying games than we are analyzing for the first USTR study.
```

This file is relatively self-documenting, and was used for all of the policies analysed in this study.

The files that document our results use a numbering system. CAPFR5 is the raw MacSharry proposal, CAPFR6 is the MacSharry proposal with compensation for price decreases only, CAPFR7 is the MacSharry proposal with full compensation, CAPFR3 is the U.S. proposal, and CAPFR4 is the Helstrom proposal.

The other configuration file defines any side-payments and set-asides. This file has a simple structure. For each policy we used a separate file. For CAPFR3 and CAPFR4 we used the following "null" file, since no sidepayments were contemplated in the U.S. or Helstrom proposals:

```
==>SIDE.CNF  .... sidepayments and set-aside CNF file for FR
* Enter the SIDEPAYMENTS first and then the SET-ASIDES, one per line.
* Enter the actual values as the last two values on the line.
[data]              Sidepayment  Set-Aside
Germany             0            0
France              0            0
Italy               0            0
Netherlands         0            0
Belgium             0            0
United Kingdom      0            0
Denmark             0            0
Ireland             0            0
Spain               0            0
Portugal            0            0
ROW                 0            0
```

The CAPFR5, CAPFR6 and CAPFR7 policies used the following files, respectively:

```
==>CAPFR5.CNF  .... sidepayments and set-aside CNF file for FR
* Enter the SIDEPAYMENTS first and then the SET-ASIDES, one per line.
* Enter the actual values as the last two values on the line.
[data]          Sidepayment     Set-Aside
Germany             0           0.123018
France              0           0.448435
Italy               0           0.102057
Netherlands         0           0.005070
Belgium             0           0.010698
United Kingdom      0           0.116329
Denmark             0           0.035327
Ireland             0           0.007831
Spain               0           0
Portugal            0           0
ROW                 0           0
```

```
==>CAPFR6.CNF  .... sidepayments and set-aside CNF file for FR
* Enter the SIDEPAYMENTS first and then the SET-ASIDES, one per line.
* Enter the actual values as the last two values on the line.
[data]                  Sidepayment     Set-Aside
```

Germany	1.97221	0.123018
France	1.74799	0.448435
Italy	1.53163	0.102057
Netherlands	0.59214	0.005070
Belgium	0.31240	0.010698
United Kingdom	0.57920	0.116329
Denmark	0.25098	0.035327
Ireland	0.14596	0.007831
Spain	0	0
Portugal	0	0
ROW	0	0

```
==>CAPFR7.CNF .... sidepayments and set-aside CNF file for FR
* Enter the SIDEPAYMENTS first and then the SET-ASIDES, one per line.
* Enter the actual values as the last two values on the line.
[data]          Sidepayment   Set-Aside
Germany         2.34366       0.123018
France          2.83771       0.448435
Italy           1.76434       0.102057
Netherlands     0.60844       0.005070
Belgium         0.34110       0.010698
United Kingdom  0.79716       0.116329
Denmark         0.34318       0.035327
Ireland         0.16478       0.007831
Spain           0             0
Portugal        0             0
ROW             0             0
```

These files are relatively self-documenting from the description of the policies in the main text.

The final "background" file that is needed is a listing of the benchmark values of all variables. These values can differ from policy to policy depending on whether or not the CAP is treated as endogeneous or not as discussed in the main text). In some cases we also requested a larger number of variables to assist in analyzing the results. These benchmark files, called BENCH5.RES for CAPFR5.RES, for example, are available on request with the bigger results files.

The program FR.BAS asks the user to specify the stem of the results file for the policy to be evaluated, the stem of the sidepayments and set-asides configuration file, and the stem of the benchmark results file. It also asks for a scratch directory: this is to facilitate the use of a RAMdrive (e.g., "d:") if available. This speeds up execution since intermediate calculations are stored and retrieved during execution.[12] Output is to an ASCII file called FR.TAB, which forms the basis of our results in the text. The program FR.BAS is as follows:

```
DECLARE SUB PROBPOS (x!(), n%, ppos!)
DECLARE SUB MDIAN1 (x!(), n%, xmed!)
DECLARE SUB SORT (n%, RA!())
DECLARE SUB MOMENT (datq!(), n%, ave!, ADEV!, sdev!, VAR!, skew!, curt!)
DECLARE SUB parse (cl$, nargs%, args$(), maxargs%)

DEFINT I-N
```

[12] This is done so as to allow arbitrarily large sensitivity analysis sample sizes to be generated, since the results do not need to be stored in memory *in toto*.

```
COLOR 14, 3, 3
CLS

PRINT
PRINT "        FR gets True Friendship Indicies for the USTR Project"
PRINT "        ================================================================="
PRINT
PRINT "          (c) Glenn W. Harrison and E.E. Rutstrom"
PRINT "               Department of Economics"
PRINT "          College of Business Admininistration"
PRINT "             University of South Carolina"
PRINT " "
PRINT "              Version: 12/91    QB: v.4.0"
PRINT

dd$ = ""          ' scratch directory

DIM a$(80)

INPUT "    * Name of the proposal RES file (e.g., CAPFR1) .......... "; resin$
PRINT
INPUT "    * Name of the sidepayments CNF file (e.g., SIDE) ........ "; side$
PRINT
INPUT "    * Name of the benchmark RES file (e.g., BENCH1) ......... "; bench$
PRINT
INPUT "    * Scratch directory (e.g., D:) .......................... "; dd$
PRINT

resin$ = resin$ + ".res"
side$ = side$ + ".cnf"
bench$ = bench$ + ".res"

nf = 33         ' this is the 11x6 model
nobs = 10000    ' maximum # of observations
nagents = 11    ' maximum # of agents
maxobs = 10000  ' maximum # of observations to analyse

OPEN resin$ FOR INPUT AS #1
            LINE INPUT #1, s$
            CALL parse(s$, nargs, a$(), 80)
            ncol = nargs                    ' # variables in RES file
CLOSE #1

PRINT USING "        * there are & variables in & ..."; STR$(ncol); UCASE$(resin$)
PRINT

DIM bench(ncol), bhold(ncol), raw(ncol), rhold(ncol), col(nagents)
DIM weight(ncol), side(nagents), set(nagents), setnew(nagents)
DIM r$(15), fa$(nf)
DIM datq(maxobs)


' now construct the lobbyist names

            r$(1) = "Germany "
            r$(2) = "France  "
            r$(3) = "Italy   "
            r$(4) = "Netherl."
            r$(5) = "Belgium "
            r$(6) = "UK      "
            r$(7) = "Denmark "
            r$(8) = "Ireland "
            r$(9) = "Spain   "
            r$(10) = "Portugal"
            r$(11) = "ROW     "

            FOR i = 1 TO 22
                        IF i <= 11 THEN
                            fa$(i) = "Ag_" + r$(i)
                        ELSE
                            fa$(i) = "NonAg_" + r$(i - 11) + "  "
                        END IF
            NEXT i
            FOR i = 23 TO 33
                        fa$(i) = "EV_" + r$(i - 22) + "    "
            NEXT i
```

```
 get the benchmark values of all variables
OPEN bench$ FOR INPUT AS #1
            icol = 0
            DO WHILE NOT EOF(1)
                        LINE INPUT #1, s$
                        CALL parse(s$, nargs, a$(), 80)
                        FOR j = 1 TO nargs
                           icol = icol + 1
                           bench(icol) = VAL(a$(j))
                        NEXT j
            LOOP
            ncol = icol
CLOSE #1

' get the benchmark weights of all variables
OPEN "weights.cnf" FOR INPUT AS #1
            FOR j = 1 TO ncol
                        IF j <= 11 OR j >= 23 THEN
                           LINE INPUT #1, s$
                           CALL parse(s$, nargs, a$(), 80)
                           s = 0!
                           FOR k = 2 TO nargs
                                    IF VAL(a$(k)) > s! THEN s = VAL(a$(k))
                           NEXT k
                           weight(j) = s
                           IF weight(j) < .001 THEN
                                    BEEP: BEEP: BEEP
                                    PRINT USING "ERROR:: Weight is non-positive in row ## of WEIGHTS.CNF"; j
                                    PRINT "        You should check this and resubmit the job."
                                    END
                           END IF
                        END IF
            NEXT j
CLOSE #1

' get the sidepayments for each country
OPEN side$ FOR INPUT AS #1
            DO WHILE NOT EOF(1)
                        LINE INPUT #1, s$
                        CALL parse(s$, nargs, a$(), 1)
                        IF UCASE$(a$(1)) = "[DATA]" THEN
                           FOR i = 1 TO nagents
                                    LINE INPUT #1, s$
                                    CALL parse(s$, nargs, a$(), 80)
                                    side(i) = VAL(a$(nargs - 1))
                                    set(i) = VAL(a$(nargs))
                           NEXT i
                        END IF
            LOOP
CLOSE #1


' now get on with the data evaluation

PRINT USING "          * now reading file & ..."; UCASE$(resin$)
PRINT

OPEN resin$ FOR INPUT AS #1
OPEN dd$ + "tmp.tmp" FOR OUTPUT AS #2

            iobs = 0

            DO WHILE iobs < nobs AND NOT EOF(1)

                        iobs = iobs + 1

                        LINE INPUT #1, s$
                        CALL parse(s$, nargs, a$(), ncol)

                        FOR jj = 1 TO ncol

                           j = jj

                           ' now make the fix for FOO-K and then AGR-K
                           IF jj = 24 THEN j = 34
                           IF jj = 26 THEN j = 35
                           IF jj = 28 THEN j = 36
                           IF jj = 30 THEN j = 37
```

```
        IF jj = 32 THEN j = 38
        IF jj = 34 THEN j = 39
        IF jj = 36 THEN j = 40
        IF jj = 38 THEN j = 41
        IF jj = 40 THEN j = 42
        IF jj = 42 THEN j = 43

        IF jj = 25 THEN j = 24
        IF jj = 27 THEN j = 25
        IF jj = 29 THEN j = 26
        IF jj = 31 THEN j = 27
        IF jj = 33 THEN j = 28
        IF jj = 35 THEN j = 29
        IF jj = 37 THEN j = 30
        IF jj = 39 THEN j = 31
        IF jj = 41 THEN j = 32
        IF jj = 43 THEN j = 33

        raw(j) = VAL(a$(jj))

        IF j >= 45 AND j <= 55 THEN
                setnew(j - 44) = set(j - 44) * raw(j)  ' value LND set-aside at new prices
        END IF

        rhold(j) = raw(j) * weight(j)

        bhold(j) = bench(j) * weight(j)

        IF j > 11 AND j < 23 THEN
                col(j - 11) = 100! * (raw(j) - bench(j)) / bench(j)      ' get into % form
                rhold(j - 11) = rhold(j - 11) * raw(j)
        END IF

    NEXT jj

    FOR k = 1 TO 11          ' the Ag lobbies
        s = rhold(k + 22) + rhold(k + 33) + rhold(k + 44) - setnew(k) + side(k)
        b = bhold(k + 22) + bhold(k + 33) + bhold(k + 44)
        r = 100! * (s - b) / b
        frtrue = r - col(k)
        PRINT #2, frtrue;

        ' also do NonAg here
        snonag = rhold(k) - s
        bnonag = bhold(k) - b
        frtrue = 100! * (snonag - bnonag) / bnonag
        frtrue = frtrue - col(k)
        datq(k) = frtrue
    NEXT k
    FOR k = 12 TO 22         ' the non-Ag lobbies

        PRINT #2, datq(k - 11);
    NEXT k

    FOR k = 23 TO 33
        frtrue = 100! * (rhold(k - 22) - bhold(k - 22)) / bhold(k - 22)
        frtrue = frtrue - col(k - 22)
        PRINT #2, frtrue;
    NEXT k

    PRINT #2, " "

LOOP

CLOSE #2
CLOSE #1

OPEN "fr.tab" FOR OUTPUT AS #2
OPEN dd$ + "frtab.tmp" FOR OUTPUT AS #3

FOR k = 1 TO nf

        OPEN dd$ + "tmp.tmp" FOR INPUT AS #1

                iobs = 0

                DO WHILE NOT EOF(1)
```

```
        iobs = iobs + 1

        FOR j = 1 TO nf
            INPUT #1, frtrue
            IF j = k THEN datq(iobs) = frtrue
        NEXT j

    LOOP

CLOSE #1

IF k = 1 THEN
    PRINT USING "       * there are & observations in & ..."; STR$(iobs); UCASE$(resin$)
    PRINT
    PRINT "       * writing statistics to FR.TAB ..."
    PRINT
    PRINT #2, USING " DATA FILE USED: &"; UCASE$(resin$)
    PRINT #2, USING " OBSERVATIONS:  &"; STR$(iobs)
    PRINT #2, USING " REFERENCE STANDARD ERROR SKEWNESS:  &"; STR$(SQR(6! / iobs))
    PRINT #2, USING " REFERENCE STANDARD ERROR KURTOSIS:  &"; STR$(SQR(24! / iobs))
    PRINT #2, " "
    PRINT #2, "Factor"; TAB(25); " Mean"; TAB(35); " Median"; TAB(45); "Std.Dev."; TAB(55); "Probability > 0"
    PRINT #2, " "
    PRINT #3, " "
    PRINT #3, "Factor"; TAB(25); " Mean"; TAB(35); " Skewness"; TAB(45); "Kurtosis"
    PRINT #3, " "
END IF

CALL MOMENT(datq(), iobs, ave, ADEV, sdev, VAR, skew, curt)
CALL MDIAN1(datq(), iobs, xmed)
CALL PROBPOS(datq(), iobs, ppos)

f$ = "####.###"

PRINT USING "          & ...  " + f$; fa$(k); ave

PRINT #2, fa$(k); TAB(25);
PRINT #2, USING f$; ave;
PRINT #2, TAB(35);
PRINT #2, USING f$; xmed;
PRINT #2, TAB(45);
PRINT #2, USING f$; sdev;
PRINT #2, TAB(55);
PRINT #2, USING f$; ppos

PRINT #3, fa$(k); TAB(25);
PRINT #3, USING f$; ave;
PRINT #3, TAB(35);
PRINT #3, USING f$; skew;
PRINT #3, TAB(45);
PRINT #3, USING f$; curt

NEXT k

CLOSE #3

OPEN dd$ + "frtab.tmp" FOR INPUT AS #3

    DO WHILE NOT EOF(3)

        LINE INPUT #3, s$
        PRINT #2, s$

    LOOP

CLOSE #2
CLOSE #3

PRINT
PRINT "       * all statistics now written to FR.TAB"
PRINT

END

SUB parse (cl$, nargs, args$(), maxargs)
' see page 114 of QB Language Reference
CONST TRUE = -1, FALSE = 0
```

```
nargs = 0
in = FALSE
L = LEN(cl$)
FOR i = 1 TO maxargs
        args$(i) = ""
NEXT i
FOR i = 1 TO L
        c$ = MID$(cl$, i, 1)
        IF (c$ <> " " AND c$ <> CHR$(9)) THEN
                IF NOT in THEN
                    IF nargs = maxargs THEN EXIT FOR
                    nargs = nargs + 1
                    in = TRUE
                END IF
                args$(nargs) = args$(nargs) + c$
        ELSE
                in = FALSE
        END IF
NEXT i

END SUB

SUB PROBPOS (x(), n, ppos)
j = 0!
FOR i = 1 TO n
        IF x(i) > 0! THEN j = j + 1
NEXT i
ppos = j / n
END SUB
```

The statistical subroutine used here are taken from *Numerical Recipes*, which is documented in Press et. al. [1986].

The specific QuickBASIC routines used here are drawn from Sprott [1991]. The above listing excludes these, since they are documented in full in Sprott [1991].

APPENDIX B: CALCULATING THE SIDEPAYMENTS

1. Calculating changes in intervention and threshold prices

Reduction in cereals prices (AGR)

AGR share of AGR+FOO = 0.4453

Cereal and oilseed share of total agriculture according to table 1 = 0.135

0.4453*0.135 = 0.0601

Proposed price change = 0.42

0.0601*0.42 = 0.0256 (0.026)

Intervention price: 1.008868*(1-0.0256)=0.983041

Threshold price: 0.966446*(1-0.0256)=0.941705

Reduction in milk and beef prices (FOO)

FOO share of AGR+FOO = 0.5547

Milk and beef share of total agriculture according to table 1 = 0.185 and 0.135, respectively.

0.5547*0.185 = 0.103

0.5547*0.135 = 0.075

Proposed price changes - 0.10 and 0.15, respectively.

0.103*0.10+0.075*0.15 = 0.02155 (0.022)

Intervention price: 1.013159*(1-0.02155)=0.991325

Threshold price: 1.012542*(1-0.02155)=0.990722

2. Set-aside calculations

The set-asides are calculated based on the original land endowment as: the share of large and medium sized farms (table 2) times the share of cereals in total production by country (table 2) times the 15% set-aside requirement.

	large farm share %	there-off cereals %	15% set-aside	land endow-ment	set-aside	new land endow-ment
Germany	0.701	0.103	0.011	11.391	0.123	11.268
France	0.865	0.216	0.028	16.016	0.448	15.567
Italy	0.494	0.117	0.009	11.731	0.102	11.629
Nether-lands	0.673	0.015	0.002	3.380	0.005	3.375
Belgium	0.676	0.053	0.005	1.981	0.011	1.970
United Kingdom	0.950	0.185	0.026	4.406	0.116	4.290
Denmark	0.849	0.146	0.019	1.899	0.035	1.864
Ireland	0.743	0.049	0.006	1.424	0.007	1.416
Source: Table 2 and benchmark model data.						

3. Calibrating compensation parameters

The following table underlies the calculation of the α's in table 3.

Total UAA by farmsize (1000 ha)			
	<20 ha	20-50 ha	>50 ha
Germany	3534	5117	3175
France	3779	9632	14613
Italy	7661	2715	4765
Netherlands	658	963	396
Belgium	441	570	352
United Kingdom	845	2038	13863
Denmark	424	1082	1292
Ireland	1263	2027	1626

Source: The Agricultural Situation Report [1990], Table 3.5.4.1.

The following calculation underlies the β in table 3.

Average acreage for large farms

	total acreage (1000 ha)	number of holdings (1000's)	average acreage	50 ha/ average acreage (percent)
Germany	3175	40.7	78.0	64.1
France	14613	164.7	88.7	56.4
Italy	4765	38.0	125.4	39.9
Nether-lands	396	5.2	76.2	65.6
Belgium	352	4.6	76.5	65.4
United Kingdom	13863	81.0	171.1	29.2
Denmark	1292	14.8	87.3	57.3
Ireland	1626	19.5	83.4	60.0

Source: The Agricultural Situation Report [1990], Table 3.5.4.1.

4. Calculating expected income loss due to price changes

Calculation performed as: Gross output in AGR minus input of AGR multiplied by the change in the support price of AGR (0.026 - see section 1 of appendix B), minus input of FOO into AGR multiplied by the change in the support price of FOO (0.022 - see section 1 of appendix B), plus gross output in FOO minus input of FOO multiplied by the change in the support price of FOO (0.022), minus input of AGR into FOO multiplied by the change in the support price of AGR (0.026).

	Gross AGR output	AGR input to AGR	FOO input to AGR	Gross FOO output	FOO input to FOO	AGR input to FOO
Germany	40.551	2.145	0.251	60.313	2.684	3.028
France	53.703	4.304	0.607	50.338	2.511	2.346
Italy	44.129	2.428	0.348	41.703	2.278	2.093
Netherlands	12.280	1.226	0.246	17.768	0.246	1.226
Belgium	6.231	0.491	0.071	9.989	0.534	0.485
United Kingdom	21.923	1.059	0.134	43.577	2.011	2.101
Denmark	6.572	0.737	0.261	8.223	0.460	0.171
Ireland	4.236	0.623	0.265	4.034	0.286	0.088
Source: Benchmark data for model.						

5. Calculating compensation payments due to price changes.

	Expected income loss in			Compensa-tion $\alpha_1 + \alpha_2 + ($ share	Compensation payments
	AGR	FOO	Total		
Germany	0.993	1.189	2.182	0.904	1.972
France	1.271	0.991	2.262	0.773	1.748
Italy	1.077	0.813	1.889	0.811	1.532
Nether-lands	0.282	0.354	0.636	0.932	0.592
Belgium	0.148	0.195	0.343	0.911	0.312
United Kingdom	0.540	0.860	1.399	0.414	0.579
Denmark	0.146	0.166	0.312	0.804	0.251
Ireland	0.088	0.080	0.168	0.867	0.146

Source: Appendix B section 4 and 5, and table 3.

6. Alternative compensation scheme; additional compensation for set-aside.

The additional compensation for set-aside land is calculated as the average yield on all agricultural land times the set-aside acreage times the share (<50 ha) of set-aside that receives compensation times the support price (0.983041 - see section 1 of appendix B).

	AGR output	Land	average yield	set-aside land	set-aside output
Germany	40.551	11.391	3.560	0.123	0.438
France	53.703	16.016	3.353	0.448	1.504
Italy	44.129	11.731	3.762	0.102	0.384
Nether-lands	12.280	3.380	3.633	0.005	0.018
Belgium	6.231	1.981	3.145	0.011	0.034
United Kingdom	21.923	4.406	4.975	0.116	0.579
Denmark	6.572	1.899	3.460	0.035	0.767
Ireland	4.236	1.423	2.975	0.007	0.822
Source: Benchmark data of model and section 2, appendix B.					

The share of set-aside land that gets compensated is:

$$(\alpha_2 + \alpha_3 \cdot \beta) \div (\alpha_2 + \alpha_3)$$

	compensation share	compensated output	additional compensation
Germany	0.8628	0.37786	0.37145
France	0.7372	1.10852	1.08972
Italy	0.6166	0.23672	0.23271
Netherlands	0.9	0.01658	0.01630
Belgium	0.8678	0.02920	0.02870
United Kingdom	0.3831	0.22172	0.21796
Denmark	0.7672	0.09379	0.09220
Ireland	0.8216	0.01914	0.01882

Source: Table above, section 6.

APPENDIX C: ADDITIONAL STATISTICAL RESULTS

Raw MacSharry proposal:

Factor	Mean	Skewness	Kurtosis
Ag_Germany	-3.07	-0.195	-0.811
Ag_France	-4.049	-0.118	-0.468
Ag_Italy	-2.657	-0.217	-0.71
Ag_Netherl.	-6.096	-0.026	-0.248
Ag_Belgium	-3.991	-0.132	-0.88
Ag_UK	-6.565	-0.137	-1.031
Ag_Denmark	-7.436	-0.194	-0.423
Ag_Ireland	-3.711	-0.118	-1.178
Ag_Spain	-0.235	-0.23	-0.36
Ag_Portugal	-0.171	-0.256	-0.454
Ag_ROW	0.177	0.612	-0.233
NonAg_Germany	1.046	0.043	-0.341
NonAg_France	1.04	0.049	-0.314
NonAg_Italy	0.748	0.061	-0.327
NonAg_Netherl.	0.649	-0.032	-0.257
NonAg_Belgium	0.453	-0.04	-0.327
NonAg_UK	0.936	-0.014	-0.462
NonAg_Denmark	1.968	0.003	-0.281
NonAg_Ireland	0.215	0.095	-1
NonAg_Spain	-0.048	0.211	-0.464
NonAg_Portugal	-0.056	-0.065	-0.152
NonAg_ROW	-0.258	-0.612	-0.233
EV_Germany	0.872	0.013	-0.291
EV_France	0.755	0.039	-0.296
EV_Italy	0.561	0.016	-0.316
EV_Netherl.	0.291	-0.028	-0.313
EV_Belgium	0.279	-0.009	-0.31
EV_UK	0.72	-0.001	-0.383
EV_Denmark	1.382	0.01	-0.31
EV_Ireland	-0.184	0.054	-0.793
EV_Spain	-0.064	-0.097	-0.201
EV_Portugal	-0.069	-0.127	-0.231
EV_ROW	-0.001	-0.006	-1.21

MacSharry with sidepayments, scheme 1:

Factor	Mean	Skewness	Kurtosis
Ag_Germany	3.988	-0.269	-0.747
Ag_France	1.51	-0.15	-0.491
Ag_Italy	3.678	-0.207	-0.729
Ag_Netherl.	1.219	0.033	-0.264
Ag_Belgium	1.781	-0.082	-0.871
Ag_UK	-2.512	-0.225	-0.913
Ag_Denmark	-0.619	-0.23	-0.264
Ag_Ireland	2.001	-0.042	-1.036
Ag_Spain	-0.235	-0.148	-0.626
Ag_Portugal	-0.171	-0.328	-0.428
Ag_ROW	0.178	0.668	-0.029
NonAg_Germany	0.712	0.02	-0.445
NonAg_France	0.683	-0.021	-0.41
NonAg_Italy	0.534	-0.04	-0.396
NonAg_Netherl.	0.486	0.026	-0.476
NonAg_Belgium	0.364	0.026	-0.163
NonAg_UK	0.622	0.049	-0.527
NonAg_Denmark	1.233	0.036	-0.47
NonAg_Ireland	0.263	0.161	-0.953
NonAg_Spain	-0.048	0.191	-0.733
NonAg_Portugal	-0.056	0.015	-0.239
NonAg_ROW	-0.26	-0.668	-0.029
EV_Germany	0.852	0.034	-0.48
EV_France	0.729	0.01	-0.443
EV_Italy	0.707	0.041	-0.462
EV_Netherl.	0.525	0.038	-0.487
EV_Belgium	0.419	0.033	-0.526
EV_UK	0.532	0.054	-0.52
EV_Denmark	1.117	0.032	-0.491
EV_Ireland	0.44	0.304	-0.656
EV_Spain	-0.064	-0.054	-0.247
EV_Portugal	-0.07	-0.114	-0.15
EV_ROW	-0.001	-0.015	-1.234

MacSharry with sidepayments, scheme 2:

Factor	Mean	Skewness	Kurtosis
Ag_Germany	5.292	-0.15	-0.883
Ag_France	4.921	-0.216	-0.452
Ag_Italy	4.631	-0.192	-0.643
Ag_Netherl.	1.429	-0.036	-0.347
Ag_Belgium	2.301	-0.131	-0.816
Ag_UK	-1.023	-0.161	-0.991
Ag_Denmark	1.805	-0.216	-0.438
Ag_Ireland	2.731	-0.037	-1.14
Ag_Spain	-0.238	-0.263	-0.429
Ag_Portugal	-0.172	-0.217	-0.51
Ag_ROW	0.18	0.624	-0.159
NonAg_Germany	0.618	0.013	-0.314
NonAg_France	0.597	0.006	-0.191
NonAg_Italy	0.47	0.052	-0.219
NonAg_Netherl.	0.43	0.103	-0.238
NonAg_Belgium	0.334	0.136	-0.204
NonAg_UK	0.537	0.084	-0.373
NonAg_Denmark	1.034	0.09	-0.333
NonAg_Ireland	0.269	0.145	-1.026
NonAg_Spain	-0.048	0.24	-0.55
NonAg_Portugal	-0.057	-0.113	-0.259
NonAg_ROW	-0.264	-0.624	-0.159
EV_Germany	0.816	0.077	-0.248
EV_France	0.839	0.047	-0.197
EV_Italy	0.699	0.076	-0.277
EV_Netherl.	0.483	0.105	-0.362
EV_Belgium	0.411	0.096	-0.249
EV_UK	0.492	0.087	-0.335
EV_Denmark	1.082	0.08	-0.311
EV_Ireland	0.519	0.343	-0.416
EV_Spain	-0.065	0.033	-0.148
EV_Portugal	-0.07	-0.202	-0.204
EV_ROW	-0.001	-0.025	-1.249

Factor	Mean	Skewness	Kurtosis
Ag_Germany	-5.391	-0.246	-0.296
Ag_France	-5.836	-0.25	-0.289
Ag_Italy	-4.461	-0.113	-0.774
Ag_Netherl.	-9.725	-0.054	-0.341
Ag_Belgium	-7.449	-0.16	-0.537
Ag_UK	-8.681	-0.16	-0.395
Ag_Denmark	-11.434	0.009	-0.306
Ag_Ireland	-6.881	-0.135	-0.85
Ag_Spain	4.361	0.172	-1.117
Ag_Portugal	3.343	0.183	-1.024
Ag_ROW	1.565	0.734	-0.16
NonAg_Germany	0.466	0.203	-0.155
NonAg_France	0.413	0.331	-0.182
NonAg_Italy	0.259	0.015	-0.397
NonAg_Netherl.	0.181	0.068	-0.314
NonAg_Belgium	0.303	0.127	-0.443
NonAg_UK	0.302	0.121	-0.155
NonAg_Denmark	0.111	0.089	-0.364
NonAg_Ireland	0.076	0.15	-0.903
NonAg_Spain	-0.305	-0.166	-1.17
NonAg_Portugal	-0.438	-0.239	-0.742
NonAg_ROW	-2.303	-0.734	-0.158
EV_Germany	0.217	-0.062	-0.369
EV_France	0.064	-0.058	-1.059
EV_Italy	-0.001	-0.163	-0.294
EV_Netherl.	-0.345	-0.033	-0.836
EV_Belgium	-0.001	-0.007	-0.216
EV_UK	0.043	-0.105	-0.237
EV_Denmark	-0.609	0.254	-0.072
EV_Ireland	-0.632	-0.006	-0.736
EV_Spain	0.115	-0.117	-1.028
EV_Portugal	0.001	-0.588	-0.36
EV_ROW	-0.018	-1.745	1.045

Factor	Mean	Skewness	Kurtosis
Ag_Germany	-5.392	-0.27	-0.326
Ag_France	-5.83	-0.201	-0.407
Ag_Italy	-4.462	-0.101	-0.776
Ag_Netherl.	-9.719	-0.06	-0.36
Ag_Belgium	-7.443	-0.143	-0.533
Ag_UK	-8.669	-0.227	-0.389
Ag_Denmark	-11.434	-0.043	-0.237
Ag_Ireland	-6.876	-0.155	-0.882
Ag_Spain	4.357	0.215	-1.153
Ag_Portugal	3.348	0.193	-1.012
Ag_ROW	1.575	0.707	-0.163
NonAg_Germany	0.466	0.256	-0.176
NonAg_France	0.413	0.273	-0.276
NonAg_Italy	0.259	0.041	-0.396
NonAg_Netherl.	0.181	0.067	-0.334
NonAg_Belgium	0.303	0.114	-0.451
NonAg_UK	0.301	0.173	-0.193
NonAg_Denmark	0.112	0.106	-0.312
NonAg_Ireland	0.075	0.17	-0.934
NonAg_Spain	-0.304	-0.209	-1.202
NonAg_Portugal	-0.439	-0.248	-0.705
NonAg_ROW	-2.318	-0.707	-0.162
EV_Germany	0.217	-0.024	-0.344
EV_France	0.064	-0.076	-1.108
EV_Italy	-0.001	-0.147	-0.288
EV_Netherl.	-0.345	-0.029	-0.841
EV_Belgium	-0.001	-0.013	-0.019
EV_UK	0.043	-0.054	-0.13
EV_Denmark	-0.609	0.205	-0.084
EV_Ireland	-0.632	-0.034	-0.696
EV_Spain	0.115	-0.134	-1.079
EV_Portugal	0.001	-0.553	-0.355
EV_ROW	-0.018	-1.776	1.156