

EC Trade Liberalization and World Trade in Feed Grains: A Comparison and A Criticism

Aniss Bahrenian and William H. Meyers

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Introduction

Agricultural policies in most countries are aimed at protecting agents involved in food production or consumption from a variety of undesirable outcomes, including: price and/or political instability, food shortages, declining agricultural income and the resulting rural-urban migration. The European Community (EC), formed in 1959, is best organized for the purpose of protecting agricultural producers and in recent years has been the target of criticism by the opponents of this protection.

In other developed countries, the agricultural policies of the United States, Canada, Australia, and Japan would also fall into the category of protective policies, although to a lesser extent, and for a different set of commodities when compared to the EC.

The events of the early 1970's, such as the dollar devaluation, several poor crops in the Soviet Union and other countries, the increased economic strength of OPEC and the resulting rise in OPEC member expenditures on consumer goods, and the worldwide economic expansion allowed the protection of agriculture in developed countries to increase without serious consequences. But the reversal of the trends just mentioned, plus advances in agricultural technology led to surplus production in the 1980s and resulted in a struggle over shrinking markets.

As the largest supplier in the world grain market, the United States began raising its voice in opposition to the protective policies of the EC and blamed the EC for its shrinking export share of the world grain market, instability of world grain prices, and the problems that American farmers were facing. On the other hand the EC argues, and correctly, that traditional exporters, especially the United States, have protective policies of their own. Hence the question becomes not one of protection per se, but rather the means and the degree to which it has been applied.

Paarlberg (1984) found that the largest net benefit of the removal of trade barriers for the grain sector in the EC goes to the United States, with other developed country exporters gaining much less. A relatively insignificant gain accrues to developing country exporters. The major effects on the United States are on prices and the distribution of exports among different commodities, rather than on total exports of all commodities. This result is more or less consistent with the findings of other more recent studies, such as those of Koester (1986), Meyers et al. (1985), and Tyers (1985). According to Tyers, the removal of trade barriers in the EC's grain sector would reduce world welfare by 1.41 billion U.S. dollars, excluding the EC. Meyers, Thamodaran, and Helmar (1985) find that the increased protection of the EC in the grain sector has been responsible for only a 5.2% decline in the value of U.S. exports from 1983 to 1985, whereas the lower worldwide income growth and the developments in the value of the U.S. dollar have had a combined negative effect of 25.8% in the value of U.S. exports. The protective policies of the EC have caused a decline of 4-16% in

world grain prices according to different studies. These studies, however, use synthetic or simplistic models and/or they project the impact of the EC trade liberalization into the future based on the models built upon the protected market structure.

To address the controversy concerning the impact of EC policies on world markets, which will be an important part of the coming GATT negotiations, it would be beneficial to examine the extent to which the EC has historically been responsible for the decline in world prices and the trade of traditional exporters. In other words, how different would world grain markets have been had the EC not adopted protective measures (with respect to tariff related barriers only)? This will be accomplished in the first part of the paper, beginning with a review of the world and the EC feed grain markets, and a review of the model used. This will be followed by the empirical results.

The second section will focus on one major problem in the simulation of trade liberalization scenarios. This problem, while hard to overcome, should at least be addressed. The paper will end with a summary statement and concluding remarks.

Due to the diversity of the commodities covered by the EC's Common Agricultural Policy (CAP), a model including all the CAP commodities would be unweildy. Therefore this study is a partial analysis of the problem, focusing only on the feed grain sector.

The Structure of the Feed Grain Market

The demand for feed grain mostly originates in developed countries. In most of these regions, a major portion of feed grain demand is derived from the demand for livestock products. Feed grain used directly as food is not a significant component of total usage in developed economies, and in the developing countries, imports of feed grain for food are limited by the lower level of income. However, income growth has made the objective of diet improvement a high priority for a great number of people and in the two advanced markets of the EC and the United States, a growing significance is attached to the other component of feed grain demand, i.e., nonfeed or industrial demand. Advances in processing, and in the food industry in general, have made it possible to use these crops in new ways and for differing purposes. The progress achieved in the marketing and processing industries has further encouraged the growth in feed and nonfeed consumption of feed grains.

This bright outlook has encouraged more investment in this market, both in terms of increased productivity by existing suppliers, and in terms of attracting new suppliers. Developing countries started to increase their share of the market in feed grains and in feed grain substitutes.

The members of the EC, as a group, were the major importers of feed grains from the 1960's until the mid-70's. Therefore, their withdrawal from the world feed grain market would have had a drastic effect on the market had it not been gradual and accompanied by the entrance of new large importers such as the Soviet Union, Japan, and other high income East Asia countries.

The CAP was adopted by the EC in 1967, in order to raise agricultural productivity, maintain rural standards of living, stabilize markets, assure regular supplies, and maintain reasonable prices. To that end, price policies were employed to insulate completely the domestic market from the rest of the world and to guarantee a minimum level of returns to producers. These prices, effective in the feed grain market, can be explained as follows:

The intervention price is the minimum guaranteed price at which EC authorities will purchase grain from producers at their designated stations.

The target price is based on the intervention price at Duisburg (the most grain deficit area) adjusted for farm income objectives income, production and utilization of various grains within the EC, and the development of trade with nonmember countries.

The threshold price is equal to the target price minus the transportation cost from Rotterdam to Duisburg, and importers' profit margin.

The relationship between these prices and the prices prevailing in the world market can be seen in Figure 1.

Removal of these policies would open the EC market to imports from regions where the production of grain is not as expensive as it is in some parts of the EC, like Duisburg. Moreover, this action would lower EC domestic prices to a level competitive with the world price level, which would in turn imply an increase in domestic consumption while making it hard (if not impossible) for some domestic producers to compete with foreign suppliers. The final result would presumably be an increase in world trade at lower prices.

The Model and the Method

Econometric techniques have been employed to evaluate the impacts of the EC's protective measures on the world feed grain market. The model used in this study, documented in Bahreinian, Devadoss and Meyers (1986), is an econometric nonspatial equilibrium model. Thirteen regions are represented in this model:

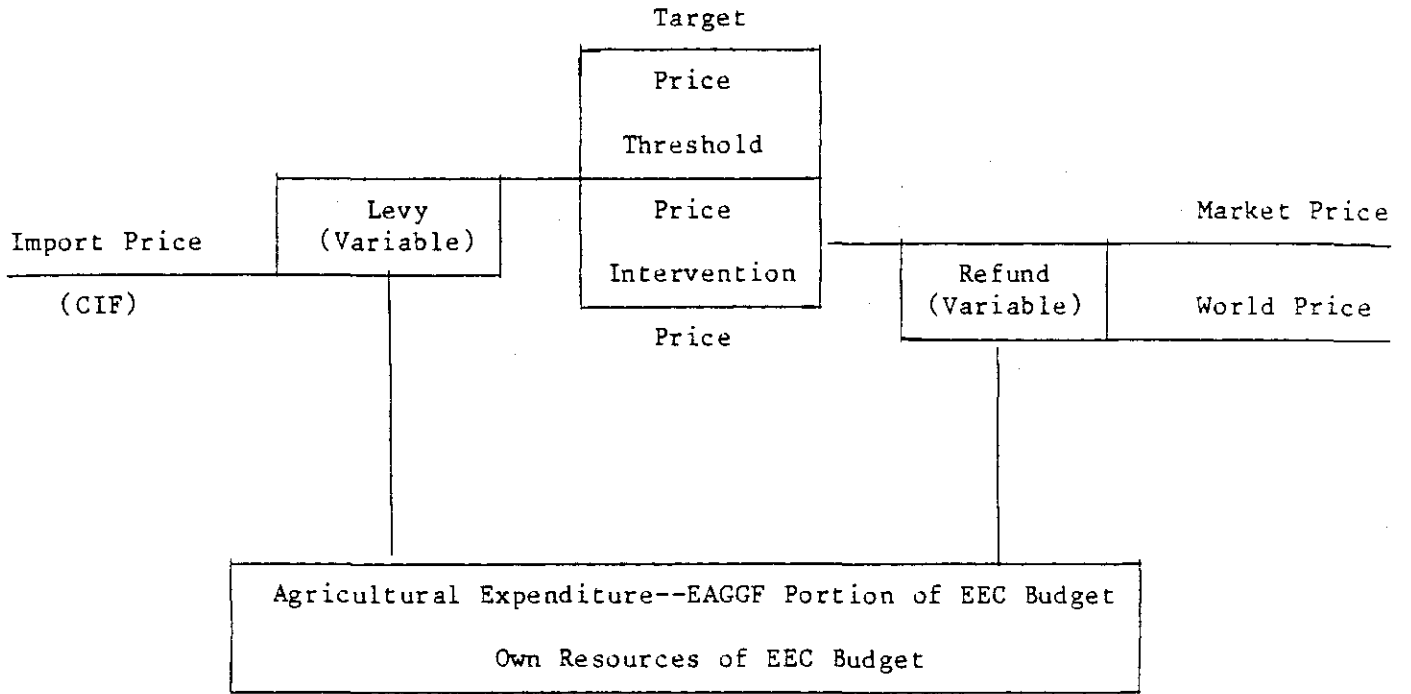


Figure 1. Levy and Refund System for Grain

Exporters

Importers

1 - EC	8 - USSR
2 - Canada	9 - Japan
3 - United States	10 - Spain
4 - Argentina	11 - High Income East Asia
5 - South Africa	12 - Eastern Europe
6 - Australia	13 - Rest of World (ROW)
7 - Thailand	

The last three regions enter exogenously into the model. A flow chart of the model is presented in Figure 2.

In the model, the EC market is liberalized through the use of Rotterdam prices as EC domestic prices (Figure 3). The effect on other regions is then calculated by comparing the historical simulation under protection and under the assumed liberalization. The period covered by the model for both estimation and historical simulation is 1967-1982.

The Empirical Results

When analyzing the results of this study one needs to take notice of one of the major assumptions, i.e., that the same market structure exists under both the protected and the liberalized regimes. This assumption is not modified in this empirical work, because of the time constraint. However, its appropriateness will be discussed in the next section of this paper.

Table 1 summarizes the results and illustrates the historical simulations of the world feed grain market with and without the EC's protective policies for the period 1980-1982. During this period the EC's protective policies affected the exporting regions most severely. It is estimated that Removal of the protective policies in the EC would bring down the EC's internal prices by an average of 40 percent for the simulated period.

These results are more or less consistent with those of previous studies. They suggest that the developed country exporters would gain the most, with the United States leading the gain in the absolute level of its exports and the other exporting countries following at a distance. However, the percentage increase in the U.S. exports is only 5 percent, whereas those of Canada and Australia are 32 and 26 percent respectively. The EC itself would import 20 percent more corn, whereas its barley exports would drop by 79 percent. The imports of the major importing countries in the model, like Japan and Spain do not fall significantly. Other large importers, like the Soviet Union, do not respond as much to prices as they do to weather conditions and their economic policy objectives. It is estimated that the world price would increase 8 percent as a result of the above developments in the feed grain market.

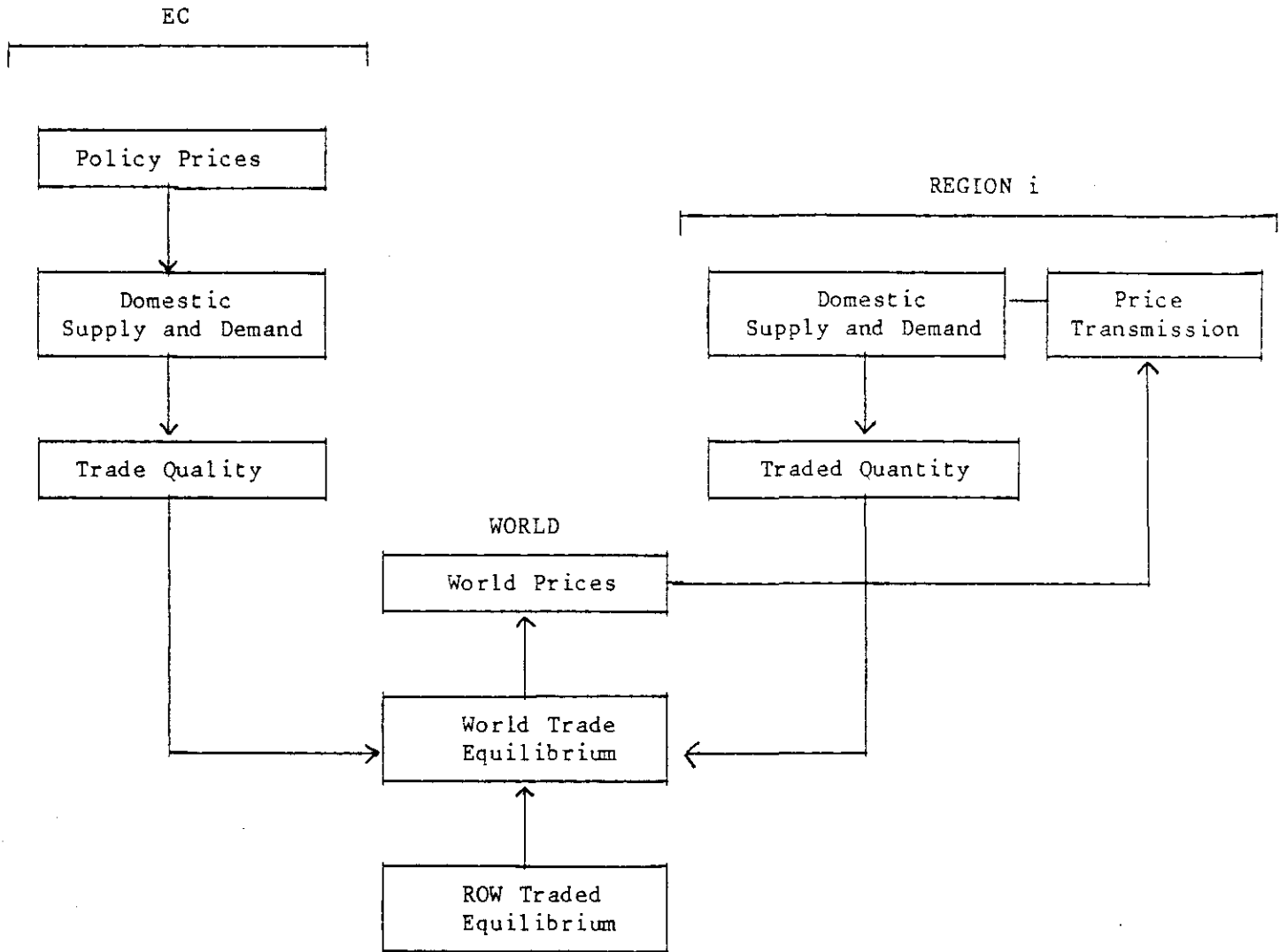


Figure 2. Graphical Representation of the Feed Grain Model

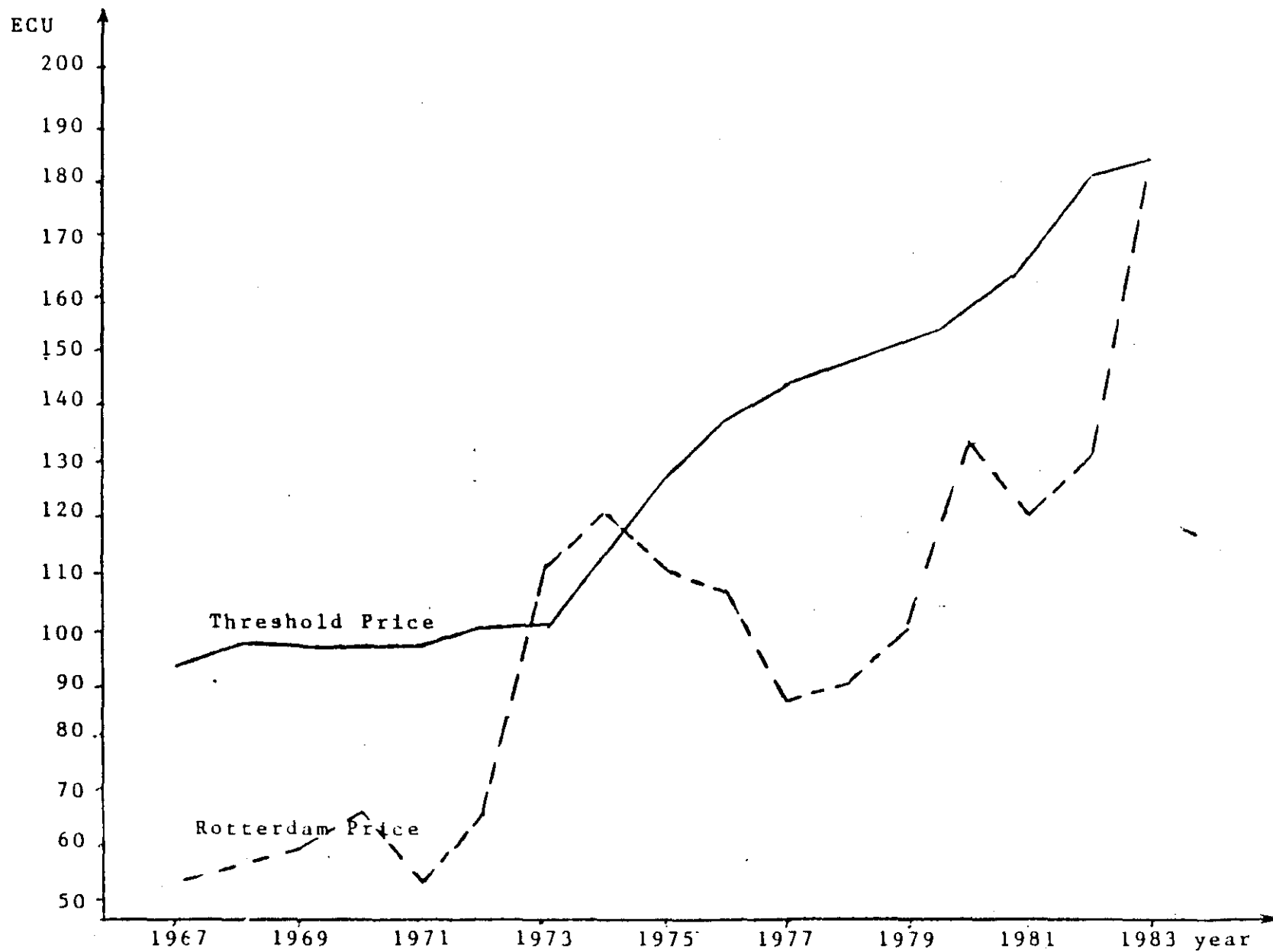


Table 1. Developments in world feed grain trade (ave. 1980-82) due to the removal of EC protective policies

	With EC Protection	Without EC Protection	Percentage Change
	-----1000 mt-----		%
<u>Exporters^a</u>			
United States	60255.7	63375.7	5
Canada	4841	6386.2	32
Australia	2532.6	3216.3	26
<u>EC</u>			
Barley exports	3773.6	800.3	-79
Corn imports	11091.4	13192.9	19
<u>Importers^b</u>			
	24266.6	23886.8	-1.6
	-----\$/mt-----		
<u>World price^c</u>	125.9	142	8

^a Other exporting regions are not reported due to insignificance of the change.

^b Reported amounts only include the net imports of Japan and Spain since other importers do not show a response to price changes.

^c In the model, the U.S. corn price is assumed to be a close proxy for world price and its variations.

Criticism

Throughout the literature reviewed, one solution method is common. That is, the use of existing protective structures to project the impacts of liberalization schemes. Usually a model is built based on the outcomes of a protected sector and the same model structure is used to simulate the state of that sector in the case where those protective measures are removed.

The problem is that, particularly in the long run, the sector will adjust to the intervention. These adjustments would not have taken place if those protective policies had not been adopted. For example, suppose that minimum guaranteed prices are adopted, as in the case of the EC's intervention prices (PIN). As is shown in Figure 4, this is going to make the supply curve perfectly inelastic at market prices below the PIN. The supply function would change from SS, under the unprotected structure, to S'S' because of the imposition of protective measures. What is being estimated in all the models reviewed in the literature is an approximation of S'S', but it is being used to predict values on SS.

The same argument may hold for demand. For example, in the case of the EC, the high policy prices of grain have caused the substitution of feed grain in feed use by such products as soymeal, manioc and corn gluten. While the consumption of these relatively cheaper substitutes has enjoyed a high rate of growth, the consumption of corn actually started to decline in 1980. Therefore, the demand function for corn has changed in the long run, and so has its elasticity.

It may be argued that it is impossible to arrive at an estimate of a free trade market when the only data available are gathered from protected markets. While this is a valid argument, there are ways around this problem. One is to discuss the problem at least conceptually, and consequently widen the confidence interval of those projections. The second alternative is to do a sensitivity analysis of the projections with respect to changes in the price elasticities of supply and demand. The amount of work to be done could be reduced if the direction of change in the elasticities is known and the analysis focuses only in that direction.

Summary and Conclusions

After reviewing the present controversy over the effect of the EC's protective policies, these policies and the world feed grain market have been briefly surveyed. Then a regional model, including 12 regions in addition to the EC, has been utilized to simulate a hypothetical liberalization of the Common Market. The simulation results for all the major trading partners have been compared to the simulation of the present protective situation. The results indicate that the most drastic change happens within the EC. That means a great loss of income for the EC producers and therefore a great impact on their political position. On the other hand, the

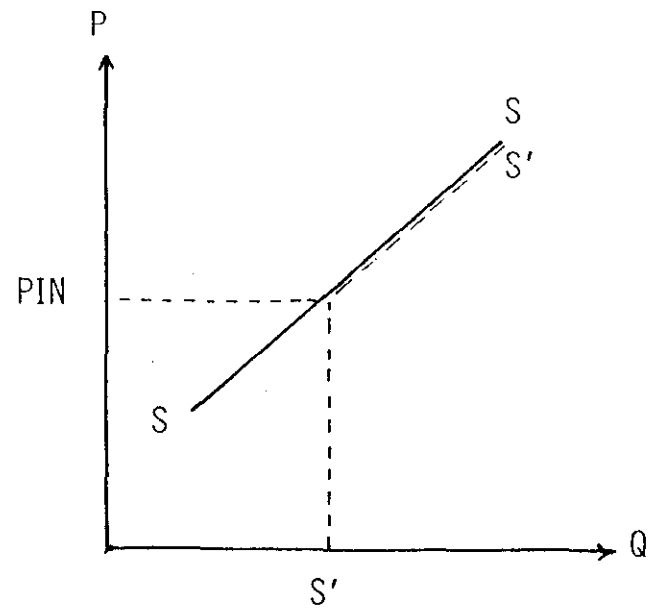


Figure (4): The supply function with no market intervention (SS) and under market intervention (S'S')

net effect of such developments on both the exports of the exporting countries, and the prices facing them, is only relatively smaller.

While these results are at least as valid as, and consistent with, most other studies, caution should be used in placing too much emphasis on the magnitudes, rather than the relative values. First of all, there is a confidence interval attached to each of the numbers presented. Furthermore, these confidence intervals should be widened, since almost all the studies focusing on the trade liberalization scenarios are subject to a major criticism: the assumption of a common structure under two drastically different economic regimes. It is highly possible that both producers and consumers would react and adjust differently under these two regimes.

In short, the EC may not play a very significant role in reducing the export share of the other exporters in the feed grain market. Moreover, the possibility of an overnight trade liberalization in the EC seems very slim, because of the adverse effect it would have on the economic, as well as the political, condition of European farmers. The implication, therefore, for the exporting country negotiators in the coming GATT round is that they should focus on some realistic alternatives such as gradual and mutual reductions in protection rather than a one-step removal of the protective system in the EC alone.

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