The Estimated Economic Impact
of Alternative Levels of
Harmonized Farm Commodity Price Supports
in the European Community

by

*James Gleckler and Luther Tweeten**

ESO #1706
1990

*Respectively, Professor of Agriculture and Forestry, Northeastern Oklahoma A&M College, Miami and Anderson Professor of Agricultural Marketing, Policy, and Trade, Department of Agricultural Economics and Rural Sociology, The Ohio State University, Columbus. Comments of Norman Rask are greatly appreciated.

The Estimated Economic Impact
of Alternative Levels of
Harmonized Farm Commodity Price Supports
in the European Community

The Single European Act, amending the 1957 Treaty of Rome and ratified by all member states of the European Community (EC) in 1987, will attempt to remove EC internal economic borders by the end of 1992. The so-called "Europe 1992" plan will attempt to harmonize standards and regulations and eliminate nontariff barriers which continue to restrain trade among EC countries.

Farm commodity support prices are established each year uniformly for all EC countries in European Currency Units (ECUs). However, within each country, local support prices change as national currency exchange rates change relative to ECUs. Ability of individual countries to change real exchange rates by arbitrarily establishing a unique exchange rate relative to the ECU gave rise to so called "green rates" of exchange for agriculture. The original rationale for allowing adjustments for agriculture from established ECU-local currency exchange rates was to permit a country to hold steady nominal local farm support prices. However, in reality the impact is for each country to set its own unique real support rate. Real agricultural support prices differ substantially among countries of the EC, sacrificing a truly "common" agricultural policy. Monetary Compensatory Amounts (MCAs), a system of border taxes and subsidies, are interventions designed to avoid market arbitrage by precisely offsetting differences in price supports among countries.

Table 1 illustrates the price setting process among commodities. The European Commission determines yearly price changes in ECUs. The Council of Agricultural Ministers then translates the ECU changes set by the Commission into national currencies using green rates. The green rate not only stabilizes local support, it allows manipulation of prices. The data in Table 1 show that despite Commission recommendations to hold or drop nominal prices, the Council raised prices for most commodities in 1986-87. This is the usual practice.

Table 1. Nominal Price Changes by the Commission and Council for 1986-1987 Crop Year.

Product	Change in ECU	Change in National Currency
	(percent)	
Soft Wheat (for bread)	0.0	+ 2.1
Durum Wheat	- 4.0	+ 0.5
Barley	- 5.0	- 3.7
Rye (for bread)	- 1.0	- 0.7
Corn (Maize)	0.0	+ 2.7
Paddy Rice	0.0	+ 5.4
Sugar	0.0	+ 1.8
Rapeseed	0.0	+ 1.1
Sunflower	0.0	+ 1.9
Milk	0.0	+ 2.2
Beef	0.0	+ 2.4
Pork	0.0	+ 1.8
Sheepmeat	0.0	+ 5.0
Average of All Products	- 0.3	+ 2.2

Source: Commission of the European Communities, The Agricultural Situation in the Community 1987 Report.

Table 2 shows how green rate conversion allows nationalization of support policies among countries. Although commodity prices measured in ECUs declined from 1986 to 1987, the changes measured in national currency reflect national policy goals for that year. Small deviations of commodity or national prices from the EC average in any one year can accumulate to large differences over many years as will be noted later.

The intent of Europe 1992 is to eliminate green rates and MCAs by the end of 1992 as a proposed monetary union among member states makes harmonized price supports among countries possible. Few believe this union and *all* internal border restrictions will be removed within the stated time frame, however. However of interest is what would happen to production, consumption, and trade if restrictions were eliminated.

Table 2. Average Change in CAP Prices by Country for 1986-1987 Crop Year.

Country	ECU Change	National Currency Change
	(percent)	
F.R. Germany	- 0.2	- 0.2
France	- 0.3	+ 2.0
Italy	- 0.6	+ 4.2
The Netherlands	0.0	0.0
Belgium	- 0.1	+ 1.7
Luxembourg	- 0.1	+ 1.7
United Kingdom	- 0.5	+ 1.9
Ireland	- 0.3	+ 2.5
Denmark	- 0.7	+ 1.3
Greece	- 0.5	+13.5
Spain	+ 1.8	+ 3.3
Portugal	+ 0.3	+ 1.7

Source: Commission of the European Communities, The Agricultural Situation in the Community 1987 Report.

Some excellent literature (e.g., Cecchini *et al.*; Hallberg; Josling; Kelch) outlines the expected outcomes of Europe 1992. Cecchini *et al.* predict that Europe 1992 will restrain consumer prices 4.5 to 7.7 percent and will increase Gross Domestic Product by 3.2 to 5.7 percent -- the latter implying benefits of over $300 billion per year. The so called "Groupe Mac" report (see Swinbank, Annex) identified annual net benefits of $531 million to $1,152 million from removal of selected non-tariff barriers alone.

We are unaware of any study which examines the impacts of harmonizing Ec farm price supports on U.S. and EC agricultural and food production, consumption, and trade. The objective of this paper is to provide such estimates. Because EC farm price support levels for 1992 have not been specified, this analysis presumes that supports will be set somewhere between the relatively low rates of the United Kingdom and the high rates of Italy.

Conceptual Framework

The impacts of harmonization depend on the magnitude of the adjustments as the European Community moves to a common support level and also on whether the Community is an exporter or importer of

3

commodities. Trade reversal, where the EC changes from an importer to an exporter (or vice versa) as supports change, poses unique issues which will be addressed in this section along with examples of consistently being an exporter or importer as support prices change.

The European Economic Community was a major net importer of agricultural commodities including food grains when the Common Agricultural Policy (CAP) was initiated in 1963. Table 3 illustrates that from 1973 to 1985, a period which included rising price supports and increasing production efficiency, self-sufficiency increased significantly in several major commodities. Some commodities imported in 1973 were exported by 1985.

We now summarize conceptually the welfare impacts within the EC and for the rest of the world with EC price harmonization -- first when the EC is an importer, second when it is an exporter, and third when it switches trade status. We shall observe that who gains and who loses with harmonization depends on the direction and magnitude of price changes.

Table 3. EC Self-Sufficiency for Selected Commodities.

Commodity	1973	1985
	(percent)	
Wheat	97	146
Corn	54	86
Sugar	92	132
Beef	95	108
Vegetable Oils	25	48

Source: Commission of the European Communities, Agricultural Facts and Figures, 1987.

Imported Commodities

The Community (EC-12) has been and will continue to be an importer of some commodities. In Figure 1, demand d and supply s in the EC-12 for the imported commodity and D and S respectively in the rest of the world (ROW) give rise to equilibrium world price P_w in the absence of transportation costs.[1] Domestic consumption q_c and production q_p in the EC-12 and of Q_c and Q_p respectively in ROW give rise to imports $q_c - q_p$ into the EC-12 equal to exports $Q_p - Q_c$ of ROW. The variable levy $p_d - p_r$ under the CAP raises the

domestic price in the EC-12 to p_d and reduces the price in ROW to p_r, lowering imports of the EC-12 to q'_c - q'_p and exports of ROW to Q'_p - Q'_c.

The welfare impact is as follows:

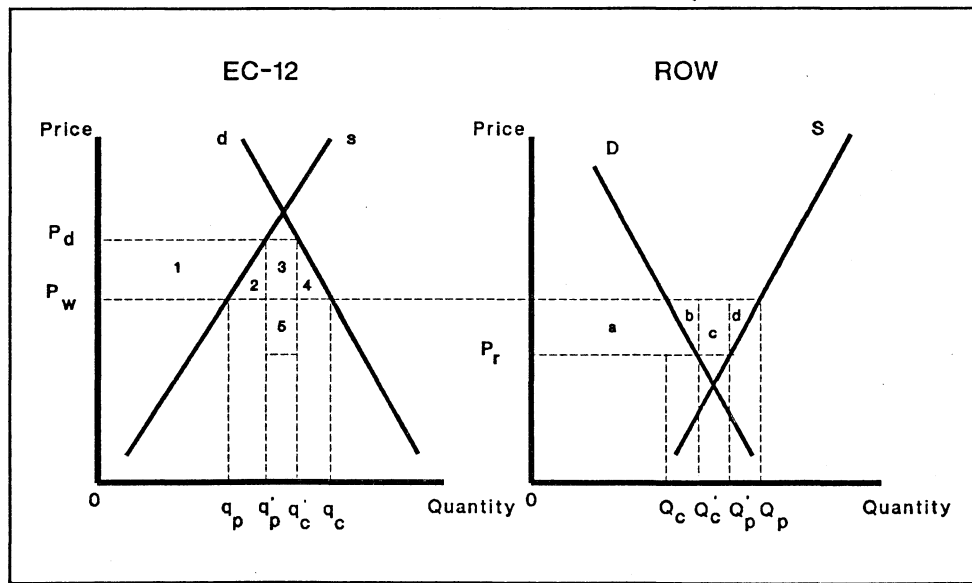|	EC-12	ROW
Gain to:		
Producers	1	- a - b - c - d
Consumers	- 1 - 2 - 3 - 4	a
Taxpayers	3 + 5	---
Region	- 2 - 4 + 5	- b - c - d
World (c=5)		- 2 - 4 - b - d.

Figure 1. Impact of a Levy on Imports.

Producer surplus under the CAP is increased by area 1 in the EC-12 and is reduced by area a + b + c + d in ROW. Consumer surplus is reduced by area 1 + 2 + 3 + 4 in the EC-12 while it is raised by area a in ROW. The import levy generates additional revenues to government or taxpayers in the EC-12 equal to area 3 + 5. The net welfare gain to the EC-12, area -2 - 4 + 5, is positive if area 5 exceeds area 2 + 4. ROW is unequivocally a loser of area b + c + d from the CAP under assumptions of Figure 1. The world also is a loser

5

-- the deadweight welfare loss is area 2 + 4 + b + d. If Europe 1992 reduces the import levy, the magnitude of the welfare loss will fall; if the levy increases in magnitude, the welfare loss will rise.

Exported Commodities

The EC-12 increasingly is an exporter of agricultural commodities with impacts as indicated in Figure 2 using notation defined for Figure 1. In the absence of market interventions, at equilibrium world price p_w exports $q_p - q_c$ from the EC-12 equal imports $Q_c - Q_p$ by ROW. Export subsidies (restitution payments) $p_d - p_r$ per unit hold domestic price in the EC-12 above the price in ROW.
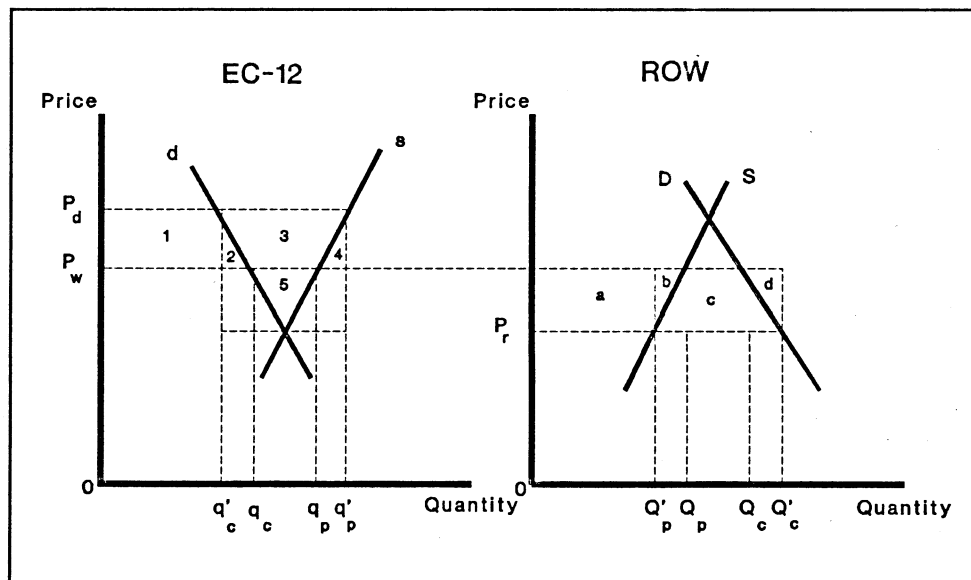

Figure 2. Impact of a Subsidy on Exports.

Welfare effects in Figure 2 are depicted as follows:

	EC-12	ROW
Gain to:		
Producers	1 + 2 + 3	- a - b
Consumers	- 1 - 2	a + b + c
Taxpayers	- 2 - 3 - 4 - 5	---
Region	- 2 - 4 - 5	c
World (5=b+c+d)		- 2 - 4 - b - d.

Welfare gain in the EC-12 to producers of area 1 + 2 + 3 is more than offset by losses to consumers (area 1 + 2) and taxpayers (area 2 + 3 + 4 + 5), leaving a net deadweight welfare loss to the EC-12 of area 2 + 4 + 5. Welfare gain to consumers of area a + b + c in ROW more than offsets the loss to producers of a + b, leaving a net welfare gain to ROW of area c in Figure 2. The gain to ROW falls short of the loss to the EC-12 so the world experiences a welfare loss of area 2 + 4 + b + d from the export subsidy of the EC. A reduction of the export subsidy under Europe 1992 diminishes the welfare effects; a rise in the export subsidy raises the welfare effects.

Trade Reversal

Figure 1 assumes the EC is an importer before and after market intervention; Figure 2 assumes the EC is an exporter before and after market intervention. Interventions of the EC sometimes result in trade reversal, shifting the EC from an importer in the absence of interventions to an exporter with interventions. Impacts are illustrated in Figure 3.
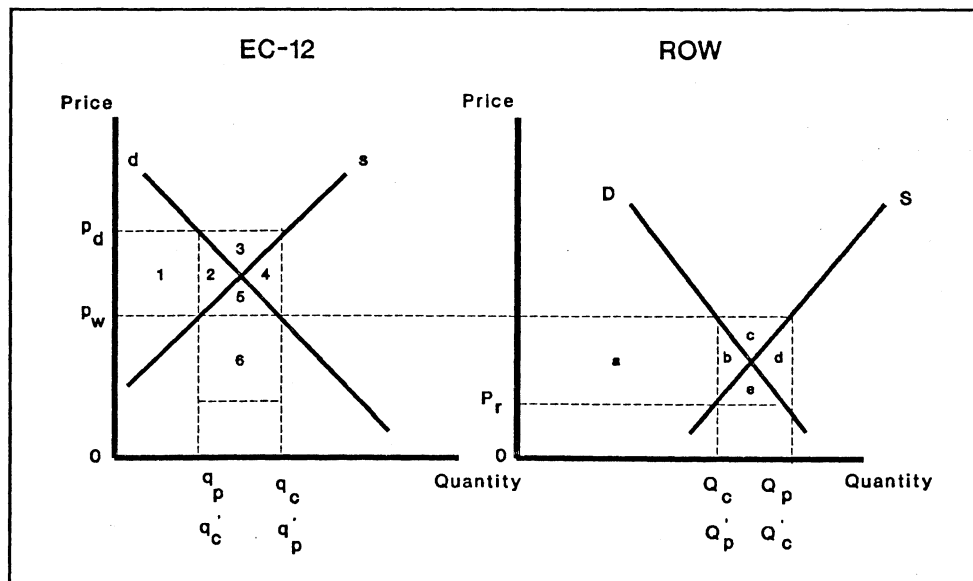

Figure 3. Impact of a Subsidy Causing Trade Reversal.

An export subsidy of $p_d - p_r$ causes the EC to shift from an importer of $q_c - q_p$ (equal to exports $Q_p - Q_c$ from ROW) at world equilibrium price p_w without market distortion to an exporter of $q'_p - q'_c$ (equal to $Q'_c -$

Q_p' in ROW). The assumption that imports before intervention equal exports after intervention is strictly a convenience to simplify Figure 3.

Welfare impacts are as follows:

	EC-12	ROW
Gain to:		
Producers	1 + 2 + 3	- a - b - c
Consumers	- 1 - 2 - 5	a + b + e
Taxpayers	- 2 - 3 - 4 - 5 - 6	---
Region	- 2 - 4 - 5 - 5 - 6	- c + e
World (6=b+c+d+e)	- 2 - 4 - 5 - 5 - b - c - c - d.	

The gains to producers in the EC of area 1 + 2 + 3 are exceeded by losses to consumers of area 1 + 2 + 5 and to taxpayers of area 2 + 3 + 4 + 5 + 6, leaving a net deadweight welfare loss of 2 + 4 + 5 + 5 + 6 to the EC. Losses to producers in ROW of area a + b + c combined with a gain to consumers of area a + b + e leave a net welfare gain of area -c + e. The latter will be positive if e exceeds c.

The welfare loss to the world is area 2 + 4 + 5 + 5 + b + c + c + d. The net welfare gains from free trade, area 5 in the EC-12 and area c in ROW, are counted twice as welfare losses to the world with trade reversal. That is (1) because the opportunity is foregone by EC-12 consumers to utilize a commodity valued more by them than its opportunity cost of production and (2) at the same time producing locally at an expense in excess of the opportunity cost of production.

Under the narrow assumptions of linear supply and demand curves and exact trade reversal in Figure 3, world deadweight loss is equal to the total export subsidy (p_d - p_r times q_c' - q_p') of the EC because area 3 equals area 5 and area c equals area e. This illustrates that trade reversal can exact a relatively large welfare loss especially on the country or community providing the export subsidy.

The above conceptual framework indicates that the incidence and magnitude of impacts of market interventions vary with the type and size of the market intervention. For the 1985-87 period, the picture is mixed (Table 4). Presumably, one reason for EC market intervention is food security. By inclusive definition, the EC was a net importer of agricultural products of $15.6 billion on average for the three years 1985-87. A more

8

exclusive definition omits natural rubber, coffee, tea, cocoa, spices, and tobacco because these are not essential for food security. By that definition, the EC trade deficit was $7.0 billion.

On theoretical grounds alone, it is not possible to conclude whether the EC is a net gainer or loser from market intervention of the CAP although the analysis indicates that the world as a whole is worse off. Who gains and who loses from changes in market interventions associated with Europe 1992 is an empirical question addressed in the subsequent quantitative analysis.

Table 4. European Community (EC-12) Agricultural Exports, Imports and Net Exports, 1985-87 Average.

Commodity	(a) Exports	(b) Imports	(a - b) Net Exports
	($ million)		
Live animals	3277.6	3347.2	-69.6
Meat and meat preparations	11868.9	11850.8	18.1
Dairy products and eggs	10909.5	8596.0	2313.5
Cereals and cereal preparations	11197.1	9205.5	1991.6
Wheat and flour	4243.4	2944.4	1299.0
Rice	608.3	698.3	-90.0
Feed grains	3288.7	3419.0	-130.3
Fruit and vegetables	13135.4	18274.1	-5138.7
Sugar, sugar preparations, and honey	2668.6	2522.5	146.1
Coffee, tea, cocoa, spices, etc.	4505.7	11384.3	-6878.6
Animal feed	3653.7	6898.6	-3244.9
Miscellaneous food preparations	3197.2	2139.8	1057.4
Beverages	9940.6	5358.5	4582.1
Tobacco, unmanufactured	508.3	2167.4	-1659.1
Tobacco, manufactured	2627.1	1894.0	733.1
Hides, skins, and furs undressed	2132.2	3114.6	-982.4
Oilseeds, oil, nuts, and oil kernels	1459.8	5170.9	-3711.1
Natural rubber	26.8	819.3	-792.5
Natural fibers	1785.0	5139.3	-3354.3
Crude animal and vegetable materials not elsewhere specified	4670.8	4907.2	-236.4
Agricultural fats and oils	3663.4	4071.9	-408.5
Total agricultural	91237.5	106869.5	-15632.0
Total	794359.7	795448.3	-1088.6

Source: U.S. Department of Agriculture.

Empirical Analysis

The impact of Europe 1992 will depend on the many changes forthcoming in policies of the European Community but only the impacts of a change in agricultural commodity price support levels are considered herein. Prices differ within the EC as apparent in Table 5. In general, Italy provides the highest and the United Kingdom the lowest level of supports. Prices for 11 major commodities are supported above or near the average of the EC in Italy and below or near the average of the EC in the U.K. It is apparent that the impact on production, consumption, trade, and world prices will be quite different if the EC adopts the lowest price common denominator of the U.K. compared to the highest common denominator of Italy. Impacts on trade, world prices, and other variables were calculated assuming prices of the U.K., Italy, and an average of the EC-12. As expected, the latter number comes close to recent performance.

The Model

The world trade model used to estimate the impact of price harmonization was created in the USDA SWOPSIM framework (Roningen). A unique characteristic of this model is the inclusion of trade functions and parameters for individual countries in the EC. The model is a static, nonspatial, price equilibrium formulation incorporating the assumptions of neoclassical trade theory. The model was initialized using USDA-developed, medium-term (5-year) elasticities in the behavioral equations. Supply, demand, trade, and price data are from the ERS ST86 (1986) database. Eleven agricultural commodities are modeled: beef, pork, milk, butter, cheese, dairy powder, wheat, corn, other coarse grains, soybeans, and sugar. Behavioral equations allow for interactions between commodities and substitution in consumption and production. Trade regions modeled include the U.S., Japan, and the European Community (EC). Initializing price and quantity data as well as transmission elasticities in the model reflect market distortions. World price transmission elasticities are less than one for regions or countries to the degree they isolate their domestic markets.

The world trade model was utilized to estimate impacts of EC price harmonization on farm and food commodity prices, production, consumption, and trade. Classical welfare estimates were made for producers, consumers, taxpayers, and for the U.S. and European Community as a whole using the foregoing conceptual framework.

10

Table 5. European Community Producer Prices, 1986.

Commodity	Average EC-12	Ratio of Country Price to EC-12 Average Price			
		F.R. Germany	France	United Kingdom	Italy
	($/MT)	(Ratio)			
Beef	3,024	1.01	1.06	0.92	1.08
Pork	1,561	0.95	1.09	0.90	1.27
Milk	263	1.06	0.93	0.83	1.30
Butter	3,469	0.98	1.09	0.68	1.46
Cheese	3,829	0.89	0.87	0.53	1.79
Powder	1,994	1.00	1.00	1.00	1.00
Wheat	182	1.14	0.95	0.89	1.30
Corn	183	1.10	0.83	1.00	1.29
Coarse Grain	161	1.12	0.89	0.92	1.32
Soybeans	208	1.00	1.00	1.00	1.00
Sugar	459	1.02	0.94	0.73	0.98

Source: Authors' calculations from individual country prices provided by Mary Ann Normile, USDA, ERS.

Impact on Prices

Results in Table 6 indicate that the level at which EC prices are harmonized has a considerable impact on U.S. and world prices. Differences in world prices with high or low supports in the EC are sizable in several instances. In the case of pork, world prices are estimated to rise 5 percent if EC prices are harmonized to U.K. levels but to fall 14 percent if EC prices are harmonized at Italian levels. In the case of sugar, world prices rise 14 percent if harmonized at U.K. levels and remain nearly unchanged if harmonized at Italian levels.

The extent to which U.S. prices reflect world prices depends on the degree of U.S. market intervention. Price transmission elasticity is low for sugar -- the 13.61 percent increase in world sugar prices estimated for harmonization of EC prices at U.K. levels results in only a 0.53 percent increase in sugar prices to U.S. producers. U.S. market price for sugar was about four times the world price in 1986. For U.S. pork and soybeans, relatively little insulated from world competition, the price transmission elasticities are near 1.0.

As expected, impacts on U.S. and world prices are small with EC prices harmonized at average (unweighted) levels. Reductions in transportation and transaction costs associated with Europe 1992 could raise productivity and efficiency even at current average prices, an impact not included in the calculations for Table 6.

11

The dairy sector is complicated by the many manufactured milk products complementary to fluid milk production and the minimal world trade in fluid milk. Although milk price supports are presumed to be unchanged by Europe 1992 because they now are nearly comparable among countries, milk and dairy product output is much influenced by incentives for other commodities which are substitutes or complements in production or consumption.

Table 6. Impact on U.S. Producer Prices and World Prices of Harmonizing EC-12 Prices at U.K., EC-12 Average, and Italian Levels.

| Commodity | Changes in U.S. and World Producer Prices with Uniform EC Price Level of: | | | | | |
| | U.K. | | EC Average | | Italy | |
	U.S.	World	U.S.	World	U.S.	World
	(percentage increase)					
Beef	2.14	4.01	-0.07	-0.13	-1.76	-3.27
Pork	4.60	4.96	-0.61	-0.66	-12.55	-13.54
Milk	2.06	NA	-0.51	NA	-4.19	NA
Butter	4.92	NA	0.30	NA	-5.02	NA
Cheese	10.12	NA	-2.37	NA	-15.94	NA
Powder	-0.37	-3.07	0.95	8.20	-0.61	-5.03
Wheat	1.65	4.07	0.36	0.90	-2.02	-4.98
Corn	0.47	0.90	-0.34	-0.65	-3.88	-7.39
Coarse Grain	1.29	2.49	0.15	0.29	-4.34	-8.35
Soybeans	-0.17	-0.18	0.00	0.00	0.05	0.06
Sugar	0.53	13.61	0.02	0.57	0.04	1.07

Impact on Production

International price changes in Table 6 cause estimated changes in production in the U.S. and the EC shown in Table 7. The lower U.K. prices restrain EC production which raises world prices and U.S. production. The price of milk powder in the U.K. is relatively high compared to the price of cheese (Table 5), causing EC powder production to rise and world powder prices to fall (Table 6). The relatively low world and U.S. prices for powder and butter compared to the price for cheese under U.K. prices cause production adjustments shown in Table 7. The higher support prices in Italy for milk and cheese cause world and U.S. price changes constraining U.S. production of milk and cheese.

Impacts of EC 1992 on U.S. sugar and wheat production are small in part because these commodities are shielded from world market prices. The impact on soybean production is small because oilseeds receive less support and protection under the CAP than do other crops, and prices are the same throughout the Community. Any change is due to cross effects in production with other EC field crops.

Table 7. Impact on Production of Harmonizing EC-12 Prices at U.K., EC-12 Average, and Italian Levels.

| Commodity | Changes in Production with Price Level of: | | | | | |
| | U.K. | | EC Average | | Italy | |
	U.S.	EC-12	U.S.	EC-12	U.S.	EC-12
	(percentage change)					
Beef	1.29	- 5.25	- 0.01	- 0.16	- 0.46	2.50
Pork	4.34	- 6.39	- 0.50	1.46	- 11.01	20.36
Milk	1.03	- 3.90	- 0.23	2.25	- 1.75	8.09
Butter	- 5.09	6.58	2.50	- 8.74	11.15	- 19.28
Cheese	5.39	- 20.81	- 1.59	9.17	- 9.19	45.39
Powder	- 4.89	7.94	2.40	- 10.32	10.68	- 22.96
Wheat	0.78	- 7.13	0.29	- 1.90	0.03	6.31
Corn	0.09	4.71	- 0.20	2.29	- 1.70	11.27
Coarse Grain	0.61	- 1.56	0.06	1.18	- 2.32	12.75
Soybeans	- 0.15	- 1.11	0.05	- 1.03	0.58	- 2.29
Sugar	0.12	- 15.29	- 0.02	- 1.48	0.21	- 2.03

Impact on Consumption

As a general rule, price support adjustments in the EC-12 drive consumption and production in opposite directions. Although corn and other coarse grain prices were allowed to fall from current levels to the U.K. price level, both production and consumption of these grains increased in the U.S. in the face of higher world prices for both feed grains and livestock. Prices increasing relatively more for livestock than for feed grains stimulated livestock production and expanded feed grain demand quantity (Table 8).

Percentage impacts (absolute value) of different EC price levels on U.S. consumption are less than on production because the bases from which percentages are computed are larger for consumption. Impacts on consumption are relatively large, however, for some commodities. In the case of pork, U.S. prices are estimated to be approximately 8 percent higher if the higher Italian support rate is chosen rather than the lower U.K. rate.

Cheese prices at the Italian level are estimated to expand U.S. consumption 12 percent above the level with U.K. prices.

Table 8. Impact on Consumption of Harmonizing EC-12 Prices at U.K., EC-12 Average, and Italian Levels.

| | Changes in Consumption with Price Level of: | | | | | |
| | U.K. | | EC Average | | Italy | |
Commodity	U.S.	EC-12	U.S.	EC-12	U.S.	EC-12
	(percentage change)					
Beef	- 0.77	2.43	0.01	- 0.30	0.40	- 1.50
Pork	- 1.98	3.77	0.28	0.08	6.12	- 9.04
Milk	1.03	- 3.90	- 0.23	2.25	- 1.75	8.09
Butter	- 2.40	18.10	- 0.15	- 1.46	2.62	-18.64
Cheese	- 4.24	21.53	1.07	- 3.09	7.82	-24.18
Powder	0.20	- 1.50	- 0.51	1.01	0.33	3.94
Wheat	- 0.29	0.89	- 0.26	0.50	- 0.94	0.98
Corn	1.50	- 7.19	- 0.02	- 1.43	- 2.34	1.65
Coarse Grain	1.29	- 0.40	- 0.34	2.18	- 2.63	4.35
Soybeans	- 0.23	- 0.17	0.04	0.03	0.52	0.38
Sugar	0.07	2.85	- 0.09	- 0.85	- 0.98	0.48

The impact of high EC prices is quite different on feed grains if the intermediate length of run is considered. Corn and other coarse grain consumption is estimated to be 4 percent lower in the U.S. under the high Italian EC price support than under the U.K. price support.

Impact on Trade

Unequal changes in production (Table 7) and consumption (Table 8) are associated with trade changes depicted in Table 9. With the low U.K. price level, the EC experiences a trade reversal from an exporter to an importer of pork, butter, and cheese and from an importer to an exporter of corn. Corn prices in the EC remain the same while lower meat and dairy production reduce demand for corn. At the same time, falling coarse grain prices shift production toward corn. Decreased EC demand coupled with increased EC production results in a change from importer to exporter of corn.

Exports of beef are reduced by 596,000 tons. The U.S. is a major beneficiary, expanding beef exports by 238,000 tons. Major gains are also made by the U.S. in pork, cheese, and wheat exports with prices set at low

levels in the EC. On the other hand, U.S. beef, pork, and cheese exports are substantially reduced with EC prices set at Italian levels.

Table 9. Impact on Trade of Harmonizing EC-12 Prices at U.K., EC-12 Average, and Italian Levels.

| | Changes in Trade with Price Level of: | | | | | |
| | U.K. | | EC Average | | Italy | |
Commodity	U.S.	EC-12	U.S.	EC-12	U.S.	EC-12
	(increase, 1,000 tons)					
Beef	238	-596	-2	9	-99	309
Pork	413	-1,163[1]	-51	160	-1,122	3,371
Butter	-15	-215[1]	14	-161	47	-50
Cheese	232	-1,671[1]	-64	491	-410	2,770
Powder	-29	213	15	-258	61	-609[1]
Wheat	528	-5,626	245	-1,650	302	3,959
Corn	-2,370	3,124[2]	-380	957	412	2,367[2]
Coarse Grain	-198	-679	148	-434	-59	4,988
Soybeans	-4	14	13	-13	140	-75
Sugar	2	-2,538	5	-114	81	-349

[1] Trade reversal -- EC changes from exporter to importer.
[2] Trade reversal -- EC changes from importer to exporter.

Large and seemingly puzzling results are apparent for corn and other coarse grains. The U.S. is predicted to have lower feed grain exports with lower (U.K.) than with higher (Italian) support prices in the EC. The reason for the seeming anomaly is that high beef, pork, and milk prices bring feed demands that are not met domestically even with higher feed grain prices in the EC, hence the world market expands for feed grain. The U.S. benefits from that expansion. The model assumes relatively high U.S. grain price supports set by Congress for the 1981 farm bill. With lower and more flexible U.S. grain price supports today, the U.S. would benefit more from expanded world feed grain demand.

Table 10 lists percentage changes associated with the U.S. trade columns in Table 9. These percentages are relative to the 1986 U.S. net trade position given in the second column of Table 10. The 528 thousand metric ton increase in U.S. wheat exports at the U.K. level (Table 9) corresponds to 1.97 percent of total U.S. wheat exports (Table 10).

Table 10. U.S. Trade Changes.

Commodity	US Net Trade 1986 MT	Percent Change in Trade with Price Level of: UK	EC Average	Italy
Beef	- 739	32.22	- 0.31	- 13.44
Pork	- 470	88.07	- 10.88	- 239.15
Butter	23	- 63.37	60.08	196.39
Cheese	- 107	218.90	- 60.38	- 396.93
Powder	300	- 9.65	5.12	20.34
Wheat	26752	1.97	0.91	1.13
Corn	39085	- 6.06	- 0.97	1.05
Coarse Grain	7456	- 2.66	1.98	- 0.80
Soybeans	20684	- 0.02	0.06	0.68
Sugar	- 1697	0.10	0.30	4.79

Welfare Analysis

For some commodities such as soybeans, American producers are made worse off by lower price supports in the EC because the Community is a major importer from the U.S. Lower livestock and livestock product supports reduce demand for soybean meal. For most commodities, however, American producers are helped by lower price supports and are hurt by higher price supports in the EC because the EC expands exports or reduces imports under greater incentive to produce and less incentive to consume. Overall, U.S. producer surplus expands $2 billion from the base level (1986 conditions) with U.K. prices and drops nearly $4 billion with Italian prices in the EC (Table 11). Thus American agriculture has up to a $6 billion stake in seeing that EC farm price supports are set at the low rather than at the high end of prices in individual countries of the EC. U.S. consumers lose from lower price supports in the EC in the intermediate run because higher world prices benefiting non-EC producers translate into higher food prices. Gains to American producers and taxpayers from lower EC supports more than offset losses to consumers so the U.S. as a whole benefits from a greater market orientation in the EC.

The big gainer from harmonization of EC prices at a lower common denominator is the EC itself. To be sure, producers are worse off (Table 11). But gains to consumers and taxpayers more than offset producer loss. Deadweight losses from intervention are reduced from 1986 levels by supports at U.K. levels but are raised by supports at Italian levels. World welfare gain from harmonization at the U.K. level is $6,853 million.

16

Table 11. Welfare Effects of Harmonizing EC-12 Prices at U.K., EC-12 Average, and Italian Levels.

| Commodity | Changes in Welfare with EC Price Level of: | | | | | |
| | U.K. | | EC Average | | Italy | |
	U.S.	EC-12	U.S.	EC-12	U.S.	EC-12
	($ million)					
Gain to:						
Producers	2,066	-15,561	-268	2,126	-3,821	36,086
Consumers	-2,226	20,657	341	480	4,492	-29,914
Taxpayers	516	1,994	-67	249	-955	-6,902
Total[a]	356	7,090	6	2,855	-284	-730

[a] Does not include gains or losses from changes in transaction and administration costs and from political rent-seeking activity.

Summary and Conclusions

The (not so) Common Agricultural Policy has allowed considerably different farm commodity price supports among countries administered through "green rate" currency exchange mechanisms and Monetary Compensatory Amounts (MCAs) as noted in Table 5. The level at which European Community farm price supports are harmonized, presumably by the end of 1992, can have a major influence on not only EC but also U.S. farm production, consumption, trade, prices, and economic welfare. This paper estimates such impacts for three scenarios.

The common price support level adopted by 1992 is likely to fall between the now prevailing low level of the U.K. and the high level of Italy. But no clear basis exists to choose a single most likely level. On the one hand, recent EC actions on growth stimulants in beef, dairy, and hogs suggest tendencies toward high protectionism. On the other hand, the nagging pressures to reduce the CAP budget could place supports nearer the U.K. level. GATT negotiations also could press for supports nearer U.K. levels. Heavy demands on the EC to resuscitate newly emerging market economics of eastern Europe create pressure for less spending on the CAP. On balance, we anticipate moderating levels of real price supports in the EC. If our expectations are realized, modest gains are in store for U.S. agriculture from the implementation of EC 1992.

17

References

Cecchini, P., M. Catinat, and A. Jacquemin. *The European Challenge 1992: The Benefits of a Single Market.* Gower: Aldershot, U.K., 1988.

Hallberg, Milton. Europe 1992: What does it mean for United States agriculture? *Farm Economics.* University Park: Cooperative Extension Service, Pennsylvania State University, September/October 1989.

Josling, Tim. Implications for non-EEC countries. Paper V in The EEC's Food Industries: Completion of the Internal Market. *Food Policy.* Washington, DC: ERS, U.S. Department of Agriculture, April 1990.

Kelch, David. Europe 1992: Implications for agriculture. Pp. 36-46 in *Western Europe Agriculture and Trade Report.* RS-89-2. Washington, DC: ERS, U.S. Department of Agriculture, July 1989.

Roningen, Vernon. A static world policy simulation (SWOPSIM) modeling framework. Staff Report AGES860625. Washington, DC: ERS, U.S. Department of Agriculture, July 1986.

Swinbank, Alan. Completion of the internal market: Implications for EEC farm and food policies. Paper I in The EEC's Food Industries: Completion of the Internal Market. *Food Policy.* Washington, DC: ERS, U.S. Department of Agriculture, April 1990.

U.S. Department of Agriculture. *Western Europe, Agriculture and Trade Report, Situation and Outlook Series.* Washington, DC: Economic Research Service, USDA, July 1989.

Endnotes

1. If the U.S. and ROW are net exporters (or both are net importers), the conceptual framework and results for ROW applies to the U.S. Of course, world welfare impacts cannot be inferred from the U.S. and EC alone.