Cattle - Marketing

Organization and Performance of World Food Systems: NC-194

OCCASIONAL PAPER SERIES

The work reported herewithin contributes to the objectives of North Central Regional Project NC-194, a joint research project of state agricultural experiment stations and the U.S. Department of Agriculture

MARKET ACCESS AND AGRICULTURAL POLICY REFORM: THE CASE OF EUROPEAN COMMUNITY BEEF TRADE

ALEJANDRO RECA AND PHILIP ABBOTT*

OP-31 FEBRUARY 1992

*THE AUTHORS ARE A GRADUATE RESEARCH ASSISTANT AND PROFESSOR, RESPECTIVELY, IN THE DEPARTMENT OF AGRICULTURAL ECONOMICS, PURDUE UNIVERSITY, WEST LAFAYETTE, IN 47907

THIS RESEARCH RECEIVED PARTIAL SUPPORT FROM REGIONAL RESEARCH PROJECT NC-194, "THE ORGANIZATION AND PERFORMANCE OF WORLD FOOD SYSTEMS"; A USDA COOPERATIVE AGREEMENT WITH THE WESTERN EUROPEAN BRANCH OF THE ECONOMIC RESEARCH SERVICE, HELD BY MAURY BREDAHL AT THE UNIVERSITY OF MISSOURI; AND THE ORGANIZATION OF AMERICAN STATES. THE VIEWS EXPRESSED IN THIS MANUSCRIPT, ALONG WITH RESPONSIBILITY FOR ANY ERRORS OR OMISSIONS, BELONG SOLELY TO THE AUTHORS.

Market Access and Agricultural Policy Reform: The Case of European Community Beef Trade

Introduction

The European Community (EC) has been tentatively pursuing reforms of it agricultural and trade policies on three fronts since about 1985. Expanding surpluses and the high cost of the Common Agricultural Policy (CAP) have created internal pressures for reform (Tangermann, Tracy). Economic stagnation and non-tariff barriers limiting trade among EC member states led to issuance of a 1985 EC Commission White Paper, "Completing the Internal Market", which launched the 1992 market unification program, aimed at establishing truly free trade within the Community borders. External pressures, coming largely from competing exporters who objected to the subsidies used to dispose of EC agricultural surpluses in world markets, and indeed a desire by the EC to reduce the cost of its farm subsidies, caused the EC to join the Punta del Este Declaration launching the Uruguay round of GATT (General Agreement on Tariffs and Trade) negotiations. In these inter-dependent efforts, the EC has shown a willingness to reduce subsidies to agriculture, but has been reluctant to abandon the institutions of its agricultural policy, based on managed domestic markets, variable levies and subsidized exports, and access barriers to imports (Leuck and Kelch, Moyer and Josling).

Internal CAP reform pressures led to co-responsibility levies, production controls, and stricter rules on access to intervention mechanisms which accumulate stocks in 1986. The beef sector was significantly affected by dairy production controls and subsequent herd reductions, a revision of the mechanisms which had previously set floor prices for beef, and reductions in real guaranteed beef prices. Short term success of these reforms plus higher prices in international markets reduced the budgetary pressures for reform for a time, but surpluses and untenable CAP costs are now re-emerging, along with renewed interest in internal reform.

The 1992 market unification program would leave agricultural policy largely intact, many believed, although some significant changes for animal products and food processing were possible (Forsythe et.al.; European Economy 35; Cecchini). European food product standards and labelling requirements were to be established and "recipe" laws eliminated to permit freer trade of processed foods and economies of scale in processing and distribution. Animal health and sanitary regulations were also to be harmonized. But negotiations led to "mutual recognition" whereby a product which can be marketed in one member state could be legally traded with another state, rather than truly harmonized regulations. 1992 standards setting has also appeared to take precedence over external negotiations on trade standards in the GATT (Kelch and Raney). The EC has agreed more quickly to eradication programs for troublesome livestock diseases (e.g. hoof and mouth disease) than to common standards, though the Third Country Meat Directive in 1987 established common rules and procedures for third country (non EC member) beef trade.[1] Monetary Compensatory Amounts (MCAs, or "green" exchange rates), which permitted price differentials to persist among member states for agricultural goods, were nearly eliminated in 1986 following the push for a common European currency (Moyer and Josling). Subsequent reforms of the MCA system have not been proposed in the Commission, although currency stability in the EC has reduced its effect. The 1992 program raised the fear that technical barriers to third country trade with the Community would increase, but also raised the hope that common standards would permit entry into a larger European market by third country exporters (U.S.I.T.C.).

The EC proposals to the GATT have reflected its willingness to reduce but not eliminate agricultural subsidies and its desire to manage agricultural markets for social objectives. It has preferred market sharing and trade agreements among large exporters to free trade, both for agricultural and industrial goods (Sapir). It has resisted pressures to eliminate the variable levy, and when it has weakened on this point, it has continued to insist on stabilizers for its domestic markets rather than having them fully share in the adjustments required in international markets. In Europe, market stability is a higher priority than market efficiency. The EC's recent proposals in the standards arena have introduced social criterion -- adjustment problems in agriculture and environmental concerns -- as legitimate complements to scientific evidence on food safety. It has resisted strongly the U.S. "tariffication" initiative, whereby non-tariff barriers would be converted to tariffs, which would subsequently be reduced, in spite of the fiscal gains it would realize.

Our initial objective for this research was to forecast trade impacts for agricultural commodities, and specifically beef, as a consequence of 1992 market unification reforms.

---

[1]This directive has been modified several times since its initial passage.

While the proposed changes in animal health regulations indicated that significant adjustments could occur (Forsythe et. al.), movement on this front has stalled. We also found that bilateral commercial agreements, which take the form of import quotas and voluntary export restraints (VERs), were more significant in determining observed trade patterns than any other factors, and EC policy makers have left these untouched in all three reform initiatives. These agreements waive or reduce the variable levy on fixed import quantities, explaining why the EC has at times been simultaneously the world's largest importer and exporter of beef. Over 85% of EC beef imports enter under these agreements (Nielsen), with access barriers making other imports prohibitively expensive.

Agricultural economists have focussed on the price mechanisms in their analyses of EC agricultural policy reforms. Trade liberalization impacts have been forecast based on "tariff equivalents" of non-tariff trade barriers (Roningen and Dixit; Hahn et.al.; Abbott). Critiques of EC CAP policies have focused on the variable levy and export restitutions (Tsolakis and Sheals; Anderson and Tyers; Josling). One objective of this paper is to add to that analysis a better understanding of the nature and consequences of market access barriers in EC agricultural and trade policy, hopefully demonstrating why commercial interests are often more concerned with the market access question than with prices and tariffs. Emphasis will be placed here on the bilateral commercial agreements on beef. Quota rents to those agreements will be estimated and their implications for trade patterns, welfare, and the political economy of beef trade will be assessed.

Beef trade illustrates well the approach taken towards trade policy in conjunction with domestic agricultural policy by the EC -- managed markets. It also requires assessment of several economic issues relevant to beef and other agricultural products. Beef is traded in international markets as a set of differentiated products rather than as a homogeneous commodity (Hayes et.al.). Bilateral commercial agreements create quota rents which appear to be distributed among middlemen rather than to the EC Commission or to producers in beef exporting countries. Furthermore, the different EC quota regimes appear to have distinct beneficiaries. While in the case of bilateral agreements, the benefits (quota rents) appear to be captured by exporters , multilateral agreements favor importers. These profit opportunities also induce coordinated marketing strategies to export higher quality products and permit the use of expensive air freight. They help explain the trend in EC imports toward increasing high quality fresh and chilled beef, while frozen beef imports decline. They also explain observed cross-hauling of beef to and from the EC.

The following section presents relevant information on EC beef market conditions and trends. The effects of the CAP in encouraging surpluses, and the consequences for trade of product differentiation are illustrated. Then the role of the CAP as a prohibitive tariff and the nature of bilateral commercial agreements as import quotas are explored in a section on beef policy. Quota rents and their distribution are estimated in the following section. The effects of these rents on trade patterns and trends and on marketing strategies and transportation modes are also explored. The concluding section draws implications for GATT negotiations, CAP reform, and changes in trade standards. Problems in modeling the impacts of these potential changes is also considered.

EC Beef Market Conditions and Trends

Table 1 compares EC market and policy set prices for beef on a liveweight basis with market prices of major beef exporters. The reference price corresponds to the domestic market price for EC beef. The guide price corresponds to the target of policy. The intervention price is the price at which the EC Commission stands ready to buy beef for stocks, which are subsequently disposed of, generally via subsidized exports. The reference (market) price falls below this price floor due to rules restricting the intervention mechanism. These data show that the EC has maintained guide prices higher that internal prices of the major exporters, as a consequence of its protection of the beef sector. Using the guide price to compare farmer returns, we find that EC domestic prices for beef are 38.8, 22.1, and 194.5% higher than those found in the U.S., Australia and Argentina, respectively, in 1988. The reference price in the EC has been similar to U.S. and Australian market prices, but intervention subsidizes producers above this level.

The EC Commission's estimated "world price" for beef may be calculated from these policy prices and published variable levies. For 1988, this price was $869 per ton, comparable to the price found in Argentina -- one of the EC's major trading partners -- but substantially lower than beef prices found in the U.S. and Australia.

Table 1. Beef Prices in the European Community and for Major Exporters

	1975	1980	1985	1988	1990
			(ECUs per metric ton)		
Reference (Market) Price	940	1,310	1,570	1,480	1,530
Guide (Target) Price	1,010	1,550	2,050	2,050	2,050
Intervention (Floor) Price	n.a.	1,390	1,850	1,850	1,850
			($ per metric ton)		
Reference (Market) Price	1,241	1,821	1,198	1,749	1,685
Guide (Target) Price	1,333	2,155	1,564	2,423	2,258
Intervention (Floor) Price	n.a.	1,932	1,412	2,187	2,037
U.S. Live Animal Market Price	983	1,478	1,287	1,477	1,590
Argentina Live Animal Market Price	530	600	470	696	690
Australia Live Animal Market Price				1,679	
EC Commission "World Price"			558	869	865

Beef prices on a liveweight basis in $ per metric ton, converted using ECU/$ exchange rates.

EC Commission "World Price" is calculated using published variable levy rates and policy prices.

n.a. = not applicable

These incentives have led to beef surpluses, accumulations of stocks, and self-sufficiency in beef. Figure 1 presents trends in the EC for beef production, consumption, stocks changes, and net exports from 1976 to 1989. During this period, the EC beef sector is much like a closed economy, with production and consumption moving closely together, and consumption absorbing the bulk of adjustment to production variations. Gross imports are relatively constant over this period, and small net exports plus stocks accumulations have been used to balance markets. Recent reductions in real beef prices have not led to significant production declines. The production increases in 1986 and 1987 are due to dairy herd liquidations following production controls, and the production declines in 1988 and 1989 are most likely due to the completion of effects of that program. Surpluses re-emerged in 1990 and diminished stocks accumulations are more likely due to the changes in intervention mechanism rules than to price impacts.

A longer view shows that EC beef production and consumption has been rather stable, with third country (net) exports making up a small fraction of supplies (6% in 1990). Figure 2 and Table 2, which present EC beef trade flow patterns, explain in part why this very small net trade is accompanied by larger and expanding gross imports and exports with third countries. Beef is traded by the Community both as a homogeneous commodity and as a set of differentiated products. Beef exports are generally frozen, of lower quality, and destined for the Middle East, South Africa and Brazil. They are used to dispose of surplus stocks. Imports are a mix of chilled, frozen, and processed meats as well as live animals. High levels of frozen beef imports from third countries persist because they are included in the import quotas negotiated under GATT. Imports of fresh and chilled beef have been expanding at the expense of frozen imports, nevertheless.

Trade with Brazil illustrates well the nature of beef cross-hauling. Brazil sends to the EC higher quality cuts and in turn imports subsidized lower quality frozen beef from the EC. This cross-hauling phenomenon is common in international beef markets. The U.S. exports higher quality beef while importing to satisfy its demand for hamburgers. Argentina exports high quality beef to Europe and low quality canned corned beef to the U.S. In most cases, market access restrictions dictate the nature of products shipped.

Intra EC beef trade (among member states) is larger than either third country imports or exports, and is predominantly fresh and chilled beef or live animals. The internal EC beef

Figure 1. Trade and Self-Sufficiency for Beef in the European Community. 1976-89 in million Metric Tons

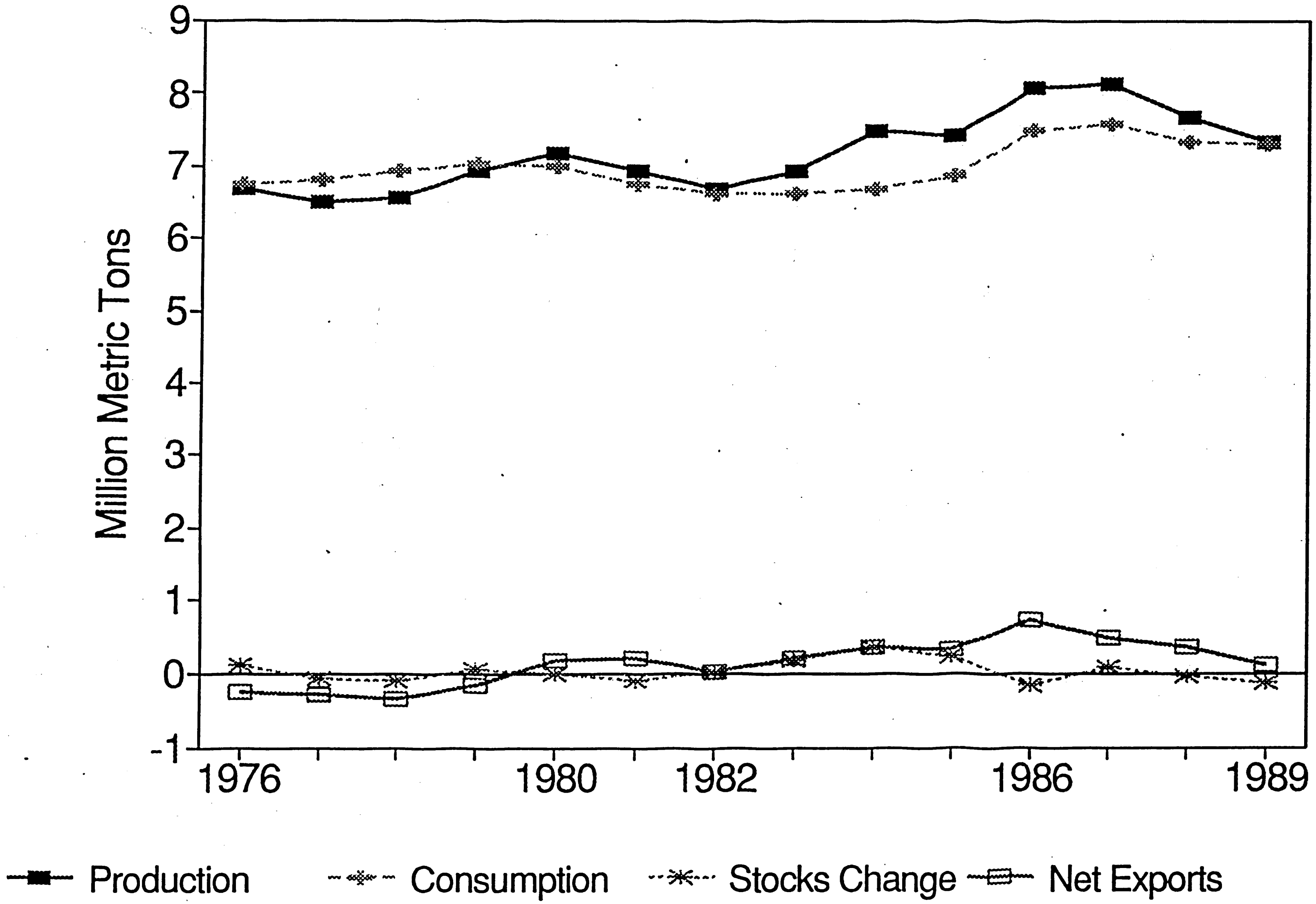


Figure 2. Intra EC and Third Country Trade in Beef 1976-89 in million Metric Tons

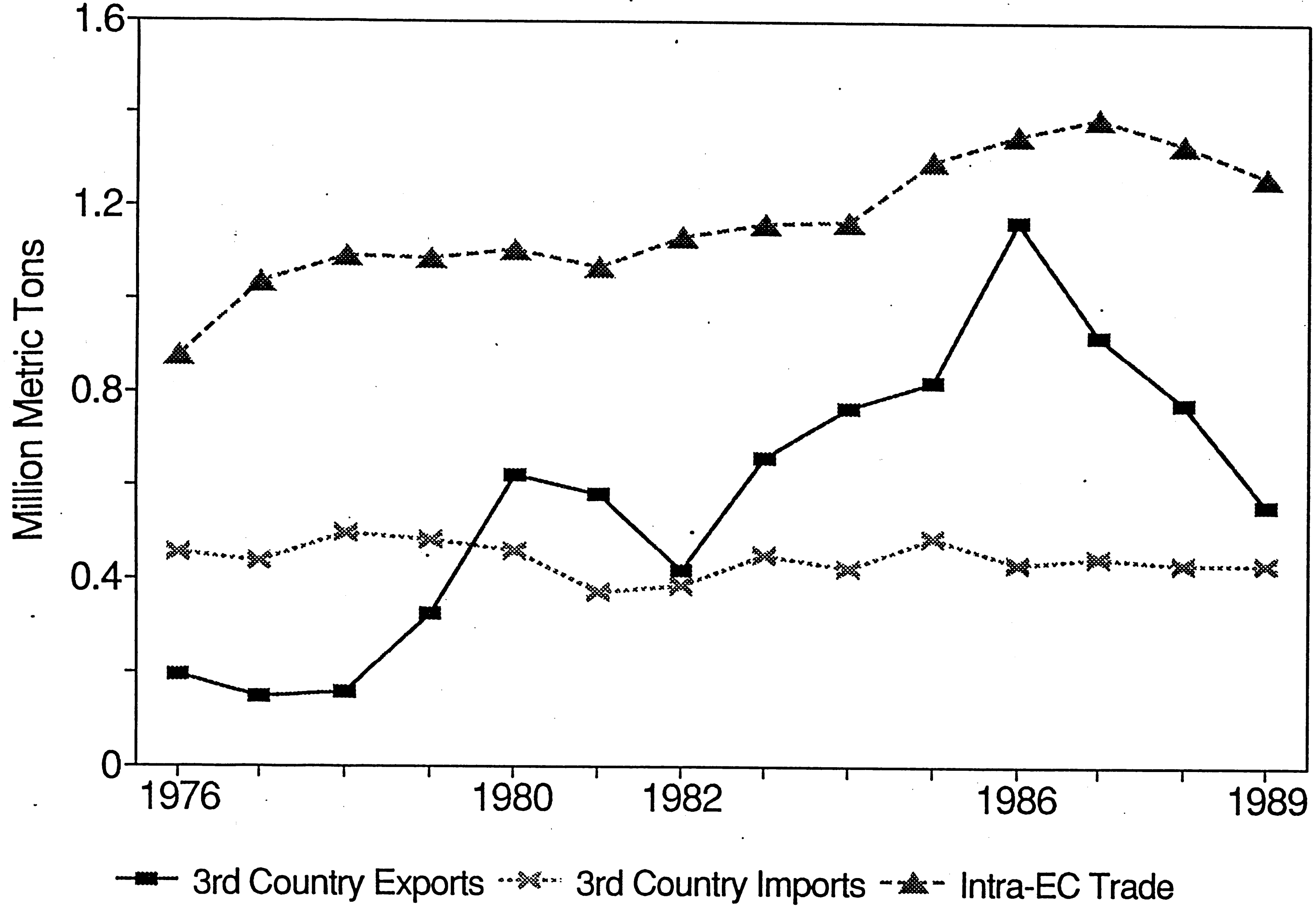


Table 2. **European Community Beef (Live Animal, Meat and Processed Product) Trade Flows: 1988 in 1,000 Tons**

	Intra EC Trade	3rd Country Imports	3rd Country Exports
Live Animals	333	94	30
Chilled & Fresh	1129	133	79
Frozen	225	111	642
Processed Meats	28	129	30

Trade with source and destination as the EC is referred to as Intra EC trade.

3rd Countries are EC trading partners who are not members of the European Community.

market appears to remain fragmented, however. Only Germany, Italy and the U.K are significant importers, accounting for 88% of EC beef imports in 1988, while France, Denmark, and Ireland join Germany as significant exporters. Cross-hauling of beef between France and Germany reflects differing preferences, which also exist among other EC member states. Since the changes in the intervention mechanism in 1986, national beef prices have diverged more than when EC policy held them together. And third country imports persist in spite of surpluses in neighboring member countries.

EC Agricultural and Trade Policy

The variable levy has been the focus of most analyses and critiques of the CAP and its impact on trade (Tsolakis and Sheales; Anderson and Tyers). A recent paper by McClatchy and Warley has drawn attention to what they term "water in the tariff", however, which means that the CAP mechanisms raise landed import costs of agricultural commodities well above comparable domestic prices.

The normal procedure for calculating the variable levy has been explained as follows. The EC Commission sets a levy equal to the difference between the guide price, which is the target of the CAP, and the observed world price, with this difference calculated frequently to reflect varying world market conditions. Thus, the levy would cause landed import costs of cheap world market supplies to equal the higher, protected costs of EC produced beef. This explanations omits two additional factors used in the actual administration of the variable levy, which we will argue causes the levy to serve as a prohibitive tariff. There is an adjustment to the levy to reflect domestic market conditions (the ratio of the reference or market price to the guide price), and levies must be converted from a live animal basis to a product basis using Commission determined conversion coefficients. Bias in those coefficients can increase landed import costs for beef products well above EC market prices. Setting a low "world price" estimate by the EC Commission could further bias their net import costs (and raise levy revenues), but establishing a true international price for beef is problematic (Hayes et.al.) and the EC Commission estimate is comparable to prices from a major trading partner - Argentina.

Table 3 presents an example variable levy calculation for October 1990 to illustrate the impact of these mechanisms. The extent to which landed import costs exceed EC internal prices

Table 3. Variable Levy Calculations -- October, 1990

Basic Variable Levy -	Liveweight Basis, ECU $/ton
Guide Price	2000.00
World Price (EC Border)	785.00
AD Valorem Duty (16%)	125.60
Landed Import Price (before Levy)	910.60
Basic Variable Levy	1089.40

Conversion to Product Equivalents -

	EC Commission Conversion Coefficient	Intra EC Trade Price Ratios	Variable Levy (ECUs/ton)
Live Animals	1.00	1.00	1089.40
Chilled, Boned Cuts	3.26	1.96	3551.44
Chilled, Unboned		1.32	
Carcasses	1.90		2069.86
Forequarters, Hindquarters	2.28		2483.83
Other chilled, unboned cuts	2.85		3104.79
Frozen			
Carcasses	1.00	0.85	1089.40
Hindquarters, Forequarter cuts	1.25		1361.75
Other unboned cuts	1.50		1634.10
Frozen boned cuts	1.72	1.25	1873.77

EC Internal Market Adjustment

Reference Price / Guide Price	Levy Adjustment (% Applied)	Variable Levy Live Animal Basis
≥ 1.06	0	0.00
1.04-1.06	25	272.35
1.02-1.04	50	544.70
1.00-1.02	75	762.58
0.98-1.00	100	1089.40
0.96-0.98	105	1143.87
0.90-0.96	110	1198.34
≤ 0.90	114	1241.92

Final Variable Levies - October, 1990 (Guide Price/Reference Price ≤ 0.90)

	Variable Levy (ECU $/ton)	Landed Import Cost -- % of: World Price	EC Internal
Live Animals	1241.92	274.2	119.6
Chilled, Boned Cuts	4048.64		165.3
Chilled, Unboned Carcasses	2359.64		149.9
Frozen boned cuts	2136.02		151.6

is estimated, using only the market adjustment and product conversion processes. The potential "low world price" effect is ignored.

It should be noted that the EC trade regime incorporates a fixed, ad valorem tariff in addition to a variable levy, which varies from 4-20% for beef products. This might be used in part to combat the problem of inaccurate invoicing of beef product costs (establishing world prices for differentiated products in thin, protected markets is problematic) or to permit the Commission to capture a portion of the rents accruing to its trade regime, although the fixed tariff is too low to achieve either of these objectives effectively. In any case, the calculation of a basic variable levy on a live animal basis requires subtraction of this fixed tariff. Hence, for the world and guide prices of Table 3, equal to 785 and 2000 ECUs per ton, respectively, the basic levy of 1089.40 ECUs per ton and the 16% (assumed) ad valorem tariff sum to their difference.

Below the basic levy calculation appear the conversion coefficients used by the EC Commission to convert the basic levy, determined for live animals, to the various product forms traded, along with the resulting levies. This table also shows the ratio of CIF unit values for intra EC trade of these same product categories to the live animal guide price. Intra EC trade CIF unit values are inside the protective effects of the CAP, but otherwise should be comparable to similar quality third country import prices, after application of the levy and tariffs. These price ratios show that the conversion coefficients used for levy calculations are much higher than corresponding internal price ratios, so that either third country imports are assumed (by the Commission) to be of much higher quality, or there is a bias built into these coefficients which causes the extent of protection to increase as product quality increases. We suspect that one objective of the Commission is to use these coefficients to prevent third countries from jumping the protection wall by exporting high quality products which command a high premium. Given the observed premiums associated with very high quality beef cuts from third countries, this may still be possible, but much of the premium accruing to the higher quality will be paid as a levy.

The final adjustment to the levy involves the next set of coefficients reported in Table 3. If the EC beef market is in deficit, and the reference (market) price is more than 106% of the guide price, the variable levy is not applied to third country imports. As this ratio declines, a sliding scale is used to increase the portion of the levy which is applied, and this adjustment exceeds 100% of the previously calculated levies when the reference price falls below the guide price. The conditions of October, 1990 reflected the normal case, where the reference price is less than 90% of the guide price and the levies for both live animals and products are increased by 14% over their previously calculated levels. Table 1 showed reference prices less than 90% of the guide price in all reported years.

The final levy for live animals is shown to be 274% of the world market beef price. Of greater importance is the calculation showing the landed cost of imports as a percentage of the reference price on a product basis. For live animals, the market adjustment raises this landed cost nearly 20% above comparable domestic prices (assumed here to be the intra EC trade unit values). This protection escalates as quality and processing level increases. For chilled, boned beef cuts, landed imports which must pay the levy would be 65% higher than comparable domestic products (ignoring quality differences within these product categories, which can be substantial).

In fact, these high levies are largely irrelevant to actual beef imports. It has been estimated that more than 85% of EC third country beef imports enter under one of several bilateral commercial agreements which either waive or reduce payment of the variable levy, although the fixed, ad valorem duties are generally paid (Nielsen). Licenses are granted to national meat marketing boards, who distribute these rights to export to the EC among distributors. In the U.S. and Canadian cases, where there is no public meat marketing board, the EC Commission administers import licenses itself.[2] Table 4 presents data on the magnitude of these effective import quotas for selected years for the four classes of agreements.

The first class of quotas are a variety of bilateral agreements negotiated under GATT requirements and approval. A special arrangement with EFTA permitted entry of 47,600 heads of live animals in 1990 with the variable levy waived and a 4% duty applied. Austria is the primary beneficiary of this quota. Imports of meats under the GATT quotas entail two parts. A 53,000 ton quota of frozen beef is unrestricted in origin, whereas 34,300 tons of chilled or

[2] As of November 1991, the Argentine Meat Export Board has been abolished as part of a structural adjustment program. Who has the right to allocate market access to the EC has not yet been determined.

Table 4. EC Beef Bilateral Commercial Agreements (Import Quotas)

GATT Quotas	1975	1980	1985	1988	1990
Live Animals (heads)-Austria, EFTA	35000	43000	43000	43000	47600
Fresh, Frozen, or Chilled Cuts (tons)					
Any Origin, Frozen	38500	50000	50000	53000	53000
Specific Origins, Chilled or Frozen		21000	29800	45300	34300
Argentina		5000	12500	21330	17000
Australia		5000	5000	5910	5000
Uruguay		1000	2300	4630	2300
Brazil				3200	
New Zealand				230	
U.S. & Canada		10000	10000	10000	10000
Balance Sheets					
Live Animals (heads)		230000	490000	164000	212500
Processing Meat (tons) (Yugoslavia)		50000	50000	12000	52500
ACP (Lome Convention Countries)					
Frozen Beef (tons)					39100
Bilateral Agreement with Yugoslavia					
Baby Beef - Maximum of 4,200 tons per month, varying with EC internal market conditions					

Variable levies are waived or reduced, but fixed ad valorem duties ranging from 4 to 20% are charged to imports licensed under bilateral commercial agreements and quotas.

Agreements are in quantities--tons for products and heads for live animals.

There were ACP quotas prior to 1990, but they were informally administered and quantities were not published.

frozen beef enter from Argentina, Australia Uruguay, Brazil, New Zealand, the U.S. and Canada. This latter quota for high quality imports, termed the "Hilton" quota, is origin specific in quantities (GATT rules do not permit specifying origin, but by setting production conditions in each of several components of this quota, the EC establishes origin specific quotas). On these imports, the variable levy is waived and a 16% duty is applied.

The EC also maintains a set of "Balance Sheet" quotas for additional imports of live animals and processing meat. The variable levy is waived or reduced on these imports and a duty of 16% is applied to meats and 20% to live animals. 212,500 heads of live animals and 52,500 tons of meat were permitted under this arrangement in 1990. Adjustments are made every three months in these quotas and on the extent of the variable levy applied, based on market conditions in the EC. To complement this, the EC also has a special arrangement with Yugoslavia to serve as the "residual supplier" for the EC market. Yugoslavia is permitted to export up to 4,200 tons of baby beef per month to the EC, with the quantity imported and terms on the levy and duties varying according to market conditions in the EC, determined based on internal price ratios and Commission assessment of quantities and needs.

The EC also continues concessional relations, including beef import quotas, for the ACP countries (former EC colonies) under the Lomé Convention. In 1990, ACP countries held quotas totaling 39,100 tons of frozen beef. In earlier years, the ACP quotas existed and were administered in an informal manner, with quotas of some countries often not filled and/or transferred to other ACP countries. At one point, the EC reduced the variable levy by 90%, if the remainder was collected as an export tax by the exporting country government, but that latter condition was ineffective and has since been dropped. No tariff is collected on ACP beef exports to the EC.

The reductions or waivers of the variable levy, and the small (relative to the variable levy) ad valorem fixed duties applied to imports under bilateral commercial agreements mean that holding a license granting the right to export beef to the EC is a valuable instrument. The value of these market access rights can be seen in the vehemence with which U.S. beef exporters (through the US government) objected when unused portions of their quota were transferred to Argentina in 1987, and the strenuous objections to the growth hormone ban, which has denied market access to the U.S. exporters of their seemingly small 10,000 ton quota. Significant rents accrue to these quotas, and the rents appear to be largely captured by middlemen rather than the EC or exporting country producers. These rents are used in negotiations between the EC and its trading partners. Concessions in the beef market by the EC may at times reflect tradeoffs among several traded commodities. These quotas have also maintained long standing trading relationships in the face of expanding EC beef surpluses. This system of market managing and granting quotas or using VERS to preserve the status quo is not uncommon in EC trade regimes (Sapir). The solution to New Zealand's lamb exports to the U.K. after it joined the Community is an example of a comparable pattern, as are voluntary export restraints negotiated on Japanese automobiles.

Quota Rents

The EC beef bilateral commercial agreements generate significant rents which accrue to the license holders permitted to export beef to the Community under those agreements. Estimates of the magnitude and distribution of those rents are presented below, along with justification for the procedures employed in that estimation.

In principle, calculation of quota rents is straightforward. The rent per ton is the difference between the high internal price of the EC and the lower world price for beef (less the fixed duty and portion of the variable levy, if any, collected). This differential is multiplied times each trade flow (quota quantity) to determine total rents and their distribution among exporters.

A number of problems complicate this procedure for EC and world beef markets. Beef is traded as both a homogenous commodity and a set of differentiated products in international markets. Hayes et al. have argued that use of liveweight beef prices is inappropriate for comparative advantage assessment and hence, setting a world price, since beef is traded as cuts and significant differences in premiums to specific cuts are observed. Premiums for beef cuts by origin have also been observed in the EC, and marketers may specify origin as a designation of quality. Transportation costs and marketing margins can also be significant. The U.S. exports most of its chilled and frozen beef to Europe via air freight, which costs six times the rate for ocean freight. The marketing system may also capture these rents, rather than passing them on to producers or governments.

In practice, we would like to set the world price just outside the EC border, and the internal price just inside the border, and reflecting the protection of the CAP. Unfortunately, EC border prices and trade values, as well as FOB unit values at exporting country borders appear to incorporate the effects of these rents for meats, though not for live animals.

Figure 3 compares the EC intervention (policy set floor) price, the CIF average unit value for intra EC trade in live animals, and the average CIF unit value for live animal imports from third countries. These prices are consistent with theory -- the third country import unit values are substantially lower than intra EC trade prices. Rents may be calculated by subtracting third country CIF unit values (plus import duties) from intra EC unit values.

The intra EC price seems to be a better approximation for internal EC prices, given the problems with the intervention mechanism and the fact that the floor set by the intervention mechanism seems not to be affecting traded live animal prices, and since the bulk of beef trade, especially for live animals, is intra EC trade. The intra EC trade CIF unit value incorporates the effects of CAP protection, and approximates EC prices just inside the border, assuming this is the standard quality of beef traded and the internal EC market is competitive. Adjustment for internal marketing margins are also not required.

Figure 4 shows a very different situation for EC border prices for chilled, boned beef cuts. Similar results were found for other forms in which beef products are traded (frozen and chilled, boned and unboned). The difference between the intervention price equivalent, using the live animal intervention price and conversion coefficients used by the Commission to set the variable levy, and the intra EC trade price is substantial, so that the "floor" is well above market prices. We earlier argued that these coefficients build a bias into the levies against higher quality imports, so their use to estimate an actual border price is inappropriate. Using reasoning similar to that for live animals, we have chosen the intra EC trade CIF unit value as the standard EC internal price. Unfortunately, the CIF average unit values for third country chilled beef imports move very closely together with the intra EC trade CIF unit values. For products from some countries known to export high quality products (Argentina and the U.S.), substantial premiums are observed. Inside the protection wall beef products should compete on a quality basis, hopefully in a competitive market setting. That the intra EC and third country unit values move together strongly suggest that quota rents are already reflected in the third country CIF

Figure 3. EC Live Animal Border Prices for 1976-90 in ECUs per Ton

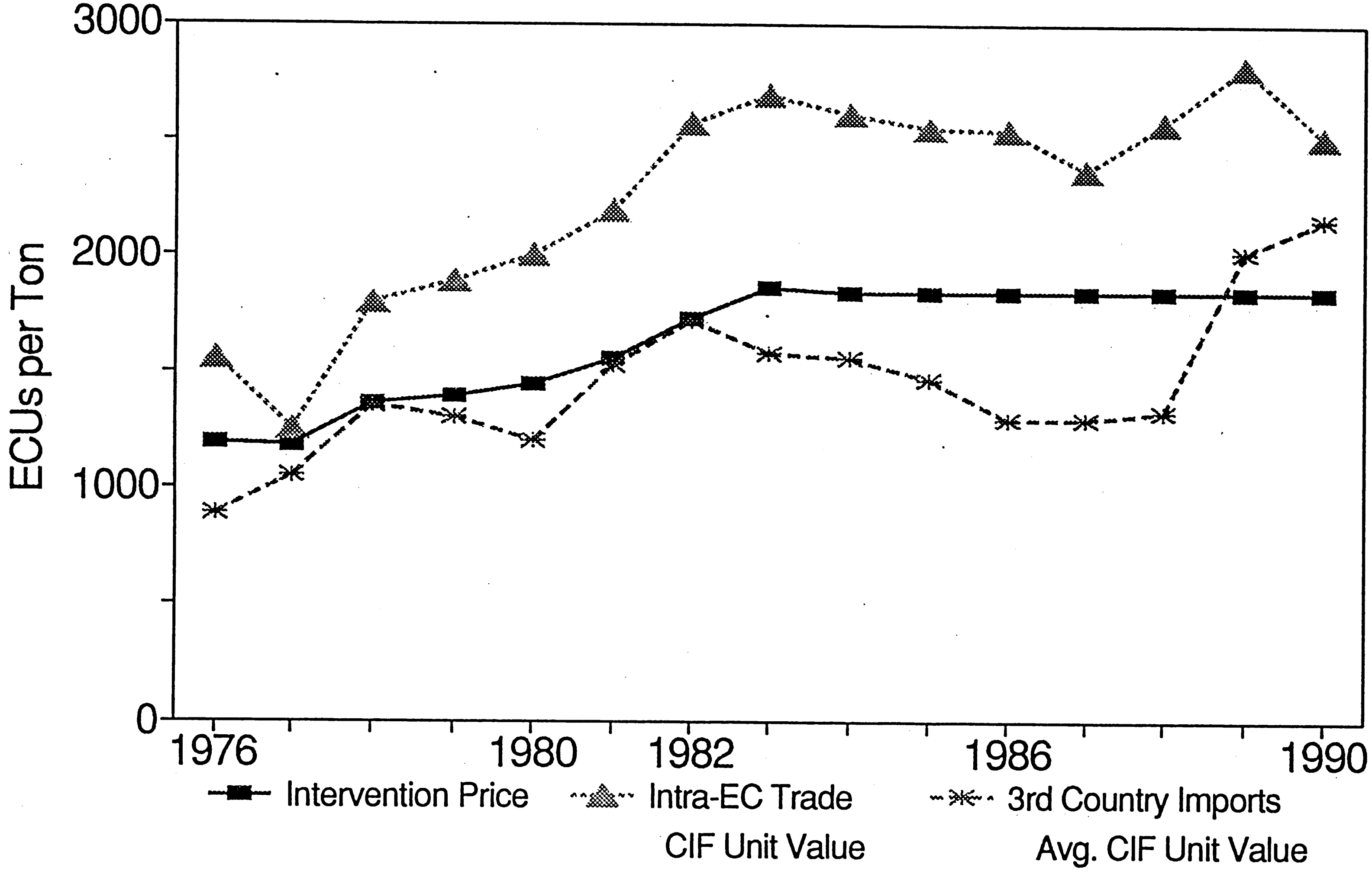
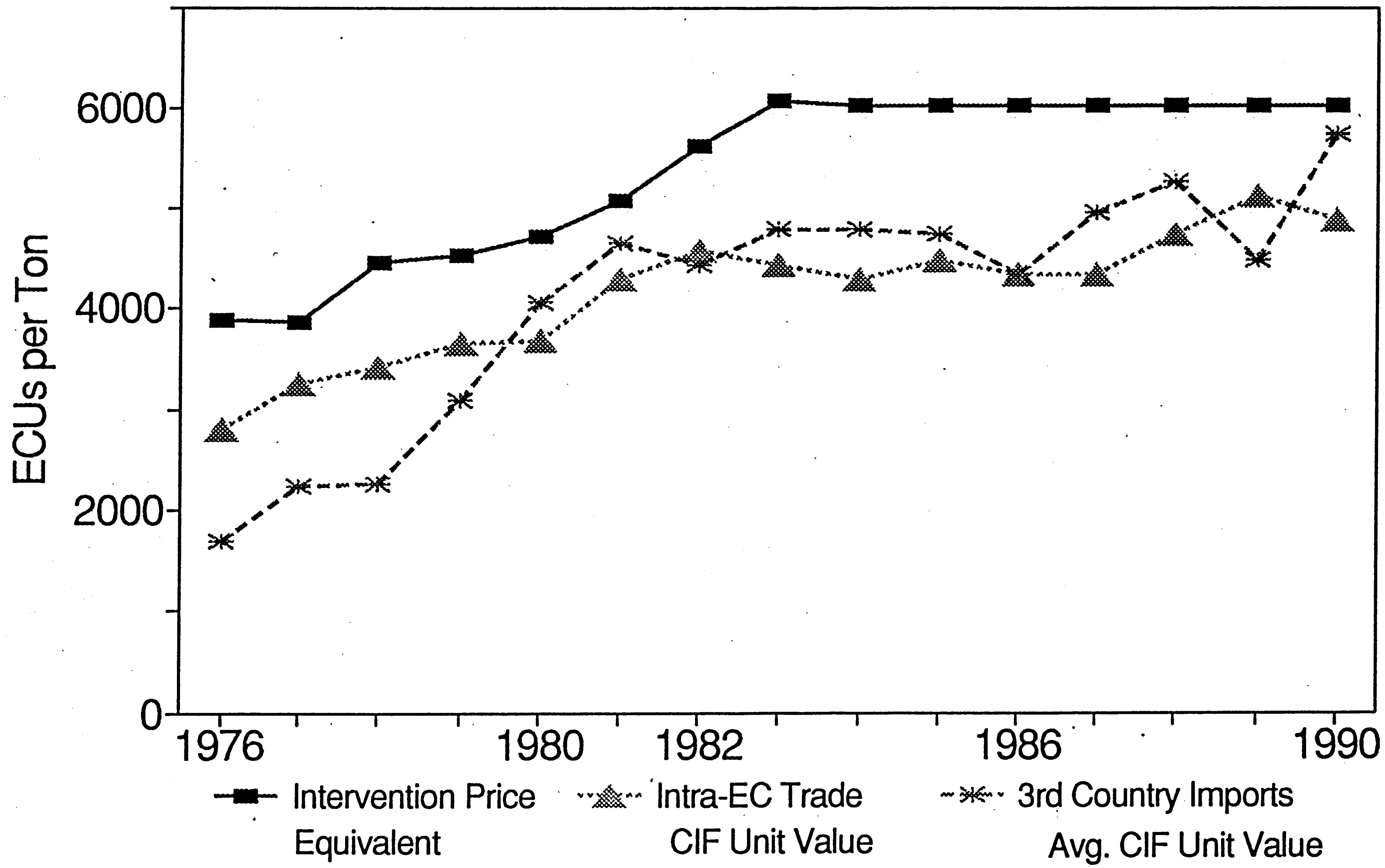


Figure 4. Chilled, Boned Cuts -- EC Border Prices for 1976-90 in ECUs per Ton



unit values, so these are inappropriate measures for world prices at the EC border. They also suggest that the rents do not accrue directly to EC marketers at the border. Given the mechanisms of bilateral commercial agreements, that beef products traded within the EC and those coming from third countries are traded just inside the EC border at comparable prices should not be surprising. Nothing prevents the international marketing and distribution system from capturing the benefit from those agreements.

Table 5 traces price linkages from U.S. and Argentine farms to the EC border. In both cases, CIF unit values for EC imports of chilled boned cuts from these origins is well above the intra EC CIF unit value. The difference between CIF unit values at the European border and FOB unit values for exports destined for the EC barely cover transportation margins for the known modes. Hence, if CIF unit values incorporate quota rents, FOB unit values for shipments to Europe do, as well. A comparison of FOB unit values to other destinations show that either higher quality products are sent to Europe, or rents are captured, since the EC destination FOB unit values are significantly higher. Comparable pricing relationships are found for other years.

The world market for beef is fragmented and thin, with other destinations (e.g. Japan) also known to apply quantitative restrictions to beef trade, so that these FOB unit values to other destinations may still incorporate some rents. A comparison with farm gate equivalent prices confirms this. That price was calculated using the ratio of live animal to product unit values for intra EC trade, to reflect the costs of EC processing methods. Using that procedure, we find a farm gate equivalent price in Argentina which is half of FOB unit values to other destinations and slightly more than a third of the FOB unit values for European destinations. The higher U.S. farmgate price for live animals leads to margins of comparable dollar magnitudes but smaller percentages. Based on this evidence, we believe rents accrue to the marketing and distribution system, not producers. The procedure of basing world prices for each origin on a farm gate equivalent price, using the intra EC trade price ratios for conversion, will be used for all sources of beef products. Farmgate prices are readily available, and transportation costs to Europe may be approximated for the important origins. Distortions in the world market and quality differences explain the differing world prices by origin used to calculate rents to EC beef imports by origin.

Table 5. Price Linkages to EC Imports from the U.S. and Argentina for Chilled, Boned Beef Cuts

	Argentina (1986)	U.S. (1990)
	($ per metric ton)	
Farmgate Price		
Product basis, using Intra EC price ratio	1793	3116
FOB Unit Values:		
Other Destinations	3550	4753
EC	5358	6337
CIF Unit Value - to EC	5628	6949
Implied Transport Margin	270	612
Quoted Transportation Rates (1990)		
Air freight	1960	2266
Ocean freight	270	290
Intra EC CIF Unit Value	4352	4893

86% of U.S. exports of Chilled Beef, and 54% of Frozen beef, destined for the EC in 1990 were shipped via air freight.

Argentina ships the bulk of its chilled beef exports to the EC via ocean freight using a coordinated marketing strategy.

We attempted to further correct these world prices by origin, using observed information on premiums or discounts accruing to EC beef imports by origin. Again using the intra EC trade unit values as our standard, premiums and discounts relative to that standard based on origin specific CIF unit values were estimated and are presented in Table 6. These show the discounts to imports of live animals, since quota rents appear to not yet be included. For the meat products, substantial premiums are found in several cases, and often the large and growing product categories for a country are those receiving the high premiums. Farmgate equivalent prices by origin were adjusted by these premiums and discounts to reflect the quality differences of these products by origin, and those adjusted prices served as our "world prices" in quota rents estimations, with internal prices approximated by the origin specific CIF unit values, to also incorporate these quality differentials.

Table 7 reports estimated quota rents for EC live animal imports by origin, both per ton and total. Table 8 reports similar information for chilled, boned beef cuts; chilled, unboned beef; and frozen beef imports by the EC. Results are for 1988 trade, with comparable results for the U.S. and Argentina in 1990 also presented. Total quota rents on live animal imports add to nearly $200 million, with Yugoslavia receiving nearly half the rents and Austria and Poland sharing most of the rest. Rents on chilled, boned beef imports were about $150 million, with most of the rents going to Argentina, who had both the largest flows and the greatest rents per ton. Rents on chilled, unboned beef were $54.4 million, going mostly to Yugoslavia, and per ton rents were lower than those found for the boned cuts. Argentina appears to be servicing the EC's demand for higher quality beef, while Yugoslavia is a residual supplier to the EC beef processing sector. Rents on frozen beef imports were nearly $106 million, with Brazil receiving over half the rents and Argentina accounting for most of the rest. U.S. beef exporters received rents of $5.2 million on its 10,000 ton quota in 1988. U.S. exports in 1990 fell to 500 tons as a result of the growth hormone ban. While per unit rents increased, total rents fell to $0.4 million, demonstrating the high cost of this loss in market access.

One expected consequence of a quantitative restriction is an increase in value added on imports, reflected in the high CIF unit values of EC beef imports, even relative to intra EC unit values. Figure 5 shows that EC import expenditures on the higher quality and value imports has been increasing (on fixed quantities), while frozen beef imports have been declining since 1980.

Table 6. Source Specific Premiums and Discounts for EC Live Animal and Beef Product Imports, 1989.

	----Chilled----		----Frozen----		Live
Country	Boned	Unboned	Boned	Unboned	Animals
Argentina	1.75		1.04		
Australia	1.36		0.97	1.74	
Austria	0.99	0.70	0.97	1.21	0.94
Brazil	1.38		1.13		
Czechoslovakia	0.93	0.71	1.32		0.54
Hungary	1.01	0.85	2.27		0.57
Poland	0.89	0.73	0.74	0.95	0.63
USA	1.03	1.65	2.45	1.45	1.02
Uruguay	1.19		0.79		
Yugoslavia	1.33	1.14	1.69	0.53	0.82

Source Specific Import CIF unit Values plus Ad Valorem Duties (Landed Import Cost without Variable Levy) divided by Intra EC Trade CIF Unit Values. Numbers greater than one correspond to premiums, while numbers less than one are for discounts, based on Intra EC trade as the standard quality product.

Table 7. Source Specific Quota Rents Accruing to EC Live Animal Imports for 1988

Origin	Trade Flow (1,000 tons)	Quota Rents $/ton	$ millions
Yugoslavia	71.3	1309	93.2
Austria	32.2	1723	55.4
Poland	38.0	1258	47.8
Czechoslovakia	4.3	1787	7.6
Hungary	1.5	1816	2.8

Intra EC trade live animal price, the EC internal price for this calculation, was 2570 ECU/ton in 1988.

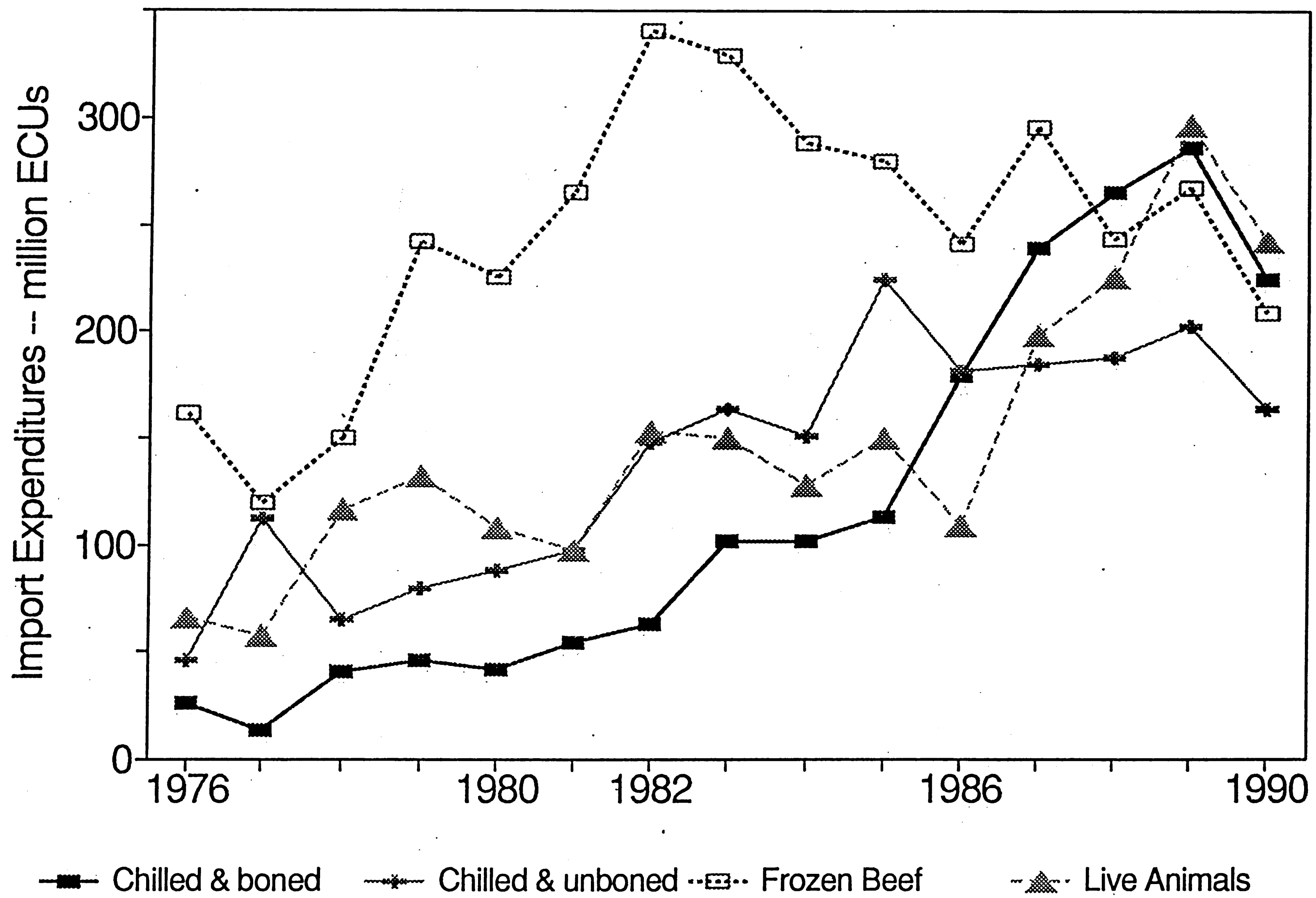
Table 8. Source Specific Quota Rents Accruing to EC Beef Product Imports

Product/ Origin	Trade Flow (1,000 tons)	EC Price $/ton	Quota Rents $/ton	$ millions
1988 Trade Flows				
Chilled, boned cuts				
Argentina	23.0	8172	5516	127.1
Australia	5.2	6341	589	3.1
Brazil	3.2	6436	3373	10.8
U.S.	2.3	4805	545	1.3
Uruguay	3.3	5553	3017	10.2
Chilled, unboned				
Austria	55.1	2310	82	4.5
Yugoslavia	17.5	4232	2847	49.9
Frozen				
Argentina	17.0	3446	2245	38.1
Brazil	32.6	3304	1704	55.5
U.S.	7.7	4110	468	3.9
Uruguay	7.9	2307	1089	8.6
1990 Trade Flows (U.S. & Argentina only)				
Chilled, boned cuts				
Argentina	22.1	8849	6367	140.7
U.S.	0.1	6949	1464	0.1
Frozen				
Argentina	22.6	2306	2714	61.3
U.S.	0.4	6839	1487	0.3

Transportation costs were ignored for European origins, and were based on quotes for shipments from the U.S. and Argentina for other destinations.

Quota rent calculations reflect application of Intra EC trade price ratios to convert farmgate prices to a product equivalent basis, and premiums and discounts were also applied to capture product differentiation by origin.

Figure 5. Evolution of EC Beef Import Expenditures by Product Category. 1976-90 in million ECUs



This adjustment is limited somewhat by the specificity of the EC bilateral commercial agreements, some of which permit only frozen beef imports. The EC Commission has been trying to negotiate reallocation of greater portions of quotas to the balance sheets (which involve lower quality products) so that EC producers can realize premiums to quality, but trading partners have been resisting these changes, preferring the high quality market niche.

Use of air freight by U.S. frozen beef exports to the EC is further evidence of the profit opportunities created but the EC trade regime, and also shows that rents may at times be eaten away by high costs. These market access opportunities have led Argentina to develop a coordinated marketing strategy, slaughtering beef in Buenos Aires and shipping it chilled, and quickly, via boat to Europe. This beef must be sold immediately upon arrival in Europe.

Processing for the European market may entail higher costs than processing for other markets, so that the above estimates are upper limits on the pure profits realized in beef trade with the EC. They clearly indicate, however, the value of access rights to the EC market.

Implications

Market access rights have been the most important factor determining EC beef import patterns. While high CAP incentives have led to surpluses and net beef exports, cross-hauling of beef occurs as trading partners fulfill their quota allotments, yielding stable import quantities. The EC is largely self-sufficient in beef and operates as a relatively closed market, but emerges at times as both the world's largest importer and exporter of beef, due to the sheer size of the market. While some quotas are filled by low cost suppliers, given an advantage by levy and tariff reductions, others supply the European demand for higher quality products, leading to rising values on fixed quantity imports.

Agricultural policy reforms without a GATT agreement would likely follow recent patterns. Slowly declining prices, limitations on the intervention mechanism to accumulate stocks, and possibly production controls would be used to stem emerging surpluses, which temporarily disappeared due to introduction of these measures in 1986. Internal CAP reforms and the 1992 market unification process have left the bilateral commercial agreements untouched, even though these are inconsistent with a free internal market. Dismantling of these quotas would only come under a sweeping GATT agreement, such as through acceptance of the "tariffication" alternative. The Europeans have resisted strongly this alternative. Their proposals have reflected their approach to market management. EC proposals have called for reductions of agricultural subsidies without elimination of institutions such as the variable levy. International market adjustment problems are to be solved via market sharing agreements. This is exactly the solution the quotas represent.

If the European belief that supply response in agriculture, and specifically beef, to lower prices would be low, trade liberalization could lead to the EC as a continuing net beef exporter. Several third country suppliers who have access to the EC market due to the price advantage of the bilateral agreements would likely be displaced by EC suppliers. Third country suppliers with high quality products to export could probably make further inroads into the EC market if access were granted.

Tariffication and trade liberalization would pose numerous difficulties for EC beef policy. We have shown that product differentiation already poses problems for levy administration, yet the complex set of coefficients which transform live animal prices to prices for products actually traded are inadequate to capture the differentiation observed in trade by product category. Setting levies by product to capture quality differentials without introducing biases in the trading regime is problematic.

Modeling the impacts of trade liberalization and the dismantling of import quotas would be extremely challenging. The importance of product differentiation by origin strongly suggests the need for Armington like models, adjusted to capture the consequences of quantitative market restrictions. Two distinct phenomenon would need to be represented. On the one hand, some suppliers must provide products of comparable quality to EC supplies. For other third country imports, substitution elasticities would be much lower. The elimination of quotas would constitute a radical change in market structure, however, so that substitution elasticities would be unlikely to remain stable.

Animal health and sanitary regulation changes pose a further difficulty for modeling and may hold the greatest hope for significant changes in the EC beef trade regime (Forsythe et. al.). Two problem areas illustrate this prospect -- trade policy concerning foot and mouth disease (FMD) and the growth hormone ban.

Some EC countries are FMD free, while others are endemic, and in the past the world beef market has fragmented along these lines (Dries and Unnevehr). In the 1992 market unification effort, some EC countries who wish to maintain access to Asian meat markets desire FMD free status, while other see little advantage in that status, and in fact have long standing trade relations with FMD endemic partners. Argentina is an important EC beef supplier, in spite of it FMD endemic status, even in the FMD free U.K. market. EC 1992 directives quickly accepted high costs to embark on disease eradication programs, but are stalled in solving the more thorny internal trade problem. Recent proposals seek to establish internal EC boundaries different from national borders, clearly inconsistent with free intra EC trade.

The only recent deviation from maintaining the status quo in trading relationships with partners is the growth hormone ban, which cut U.S. access to it 10,000 ton beef quota. Trade standards are being debated in GATT as well as internally by the EC, and recent EC proposals to the GATT reflect the internal problems which brought about the growth hormone ban. The EC position is now that social objectives in addition to scientific evidence are appropriate criterion for trade standards. The hormone ban illustrates, however, the high cost of denied market access. U.S. beef exporters lost $ 4.8 millions in quota rents from EC beef imports.

The high quota rents which accrue to middlemen and EC trading partners demand that we recognize a new actor in the political economy of EC agricultural policy. EC policy objectives are to maintain stable quantities and prices for consumption, and they are willing to pay a cost for that stability. Producers are also afforded high and stable prices, though prices are declining slowly over time, and benefits will continue to erode. Third country suppliers who cooperate with the EC agricultural and trade policy regime are given access to the EC market at beneficial terms. Over half of the value of imports may be rents accruing to bilateral commercial agreements. Thus, middlemen in both the EC and third countries are important participants in the policy making process. The existence and distribution of these rents should be a concern of economists and policy makers, both in the EC and in supplying countries.

References

Abbott, Philip. Assessing Benefits From Agricultural Trade Liberalization: Methodological Issues. Presented to the International Agricultural Trade Consortium Symposium "Bringing Agriculture into the GATT." Annapolis, Maryland, August 1988.

Agra Europe, Ltd. CAP Monitor. London: Various issues.

--------. 1992: Implications for the Agrifood Industry. Special Report N°48. London: January, 1989.

Ames, Glenn C.W. "US-EC Agricultural Policies and GATT Negotiations." Agribusiness, An International Journal. 6 (1990): 283-295.

--------. "An Observation on the Political Economy of Agricultural Policy Making in the European Community." Agribusiness, An International Journal 7 (1991): 375-388.

Anderson Kym and Rodney Tyers. "European Community Grain and Meat Policies: Effects on International Prices, Trade and Welfare." European Review of Agricultural Economics. 11 (1984): 367-394.

Bredahl, Maury E. and Kenneth W. Forsythe Jr. "Harmonizing Phytosanitary and Sanitary Regulations through GATT Negotiations." AER 1988-11. Department of Agricultural Economics, University of Missouri-Columbia, Columbia, Missouri, 1988.

Cecchini, Paolo. 1992: The Benefits of a Single Market. Luxembourg: Office for Official Publications of the European Communities, 1988.

Commission of the European Communities. European Economy. Luxembourg: Office for Official Publications of the European Communities, Various issues.

-------- Recueil des Actes Agricoles-TomeXI/1-Viande Bovine. Luxembourg: Office for Official Publications of the European Communities, 1990.

-------- The Agricultural Situation in the Community. Luxembourg: Office for Official Publications of the European Communities, Various issues.

Dries, Mark A. and Laurian J. Unnevehr. "Influence of Trade Policies on Price Integration in the World Beef Market." Agricultural Economics 4 (1990):73-89.

EUROSTAT. External Trade Statistics, Analytical Volumes. Luxembourg: Office for Official Publications of the European Communities, Various Issues.

Fennell, Rosemary. The Common Agricultural Policy of the European Community. Oxford: BSP Professional Books, 1985.

Forsythe, Kenneth, Maury Bredahl, Philip Abbott, and Alejandro Reca. "The EC Single Market Program: Effects on Trade in Animal Products." Presented at a USDA/World Bank Conference on "EC 1992: Implications for World Food and Agricultural Trade," Washington DC, November 19-20, 1990.

Gardiner, Walter. "EC 1992: What's in the Store for the United States." Walter H. Gardiner and David R. Kelch eds. EC 1992: Perspectives on Agriculture. AGES 9043. U. S. Dept. of Agriculture, Economic Research Service, May 1990.

General Agreement on Tariffs and Trade, The International Market for Meat, 1989/1990 Arrangements Regarding Bovine Meat, Tenth Annual Report, General Agreement on Tariffs and Trade, Geneva, 1990.

Hahn, William, Terry L. Crawford, Linda Bailey, and Shayle Shagam. The World Beef Market-Government Intervention and Multilateral Policy Reform. Staff Report AGES 9051. U. S. Dept. of Agriculture, Economic Research Service. August 1990.

Hayes, Dermot J., John R. Green, Helen H. Jensen, and Adrienne Erbach. "Measuring International Competitiveness in the Beef Sector." Agribusiness, An International Journal 7 (1991): 357-374.

Hertel, Thomas W., Mark Gehlhar, and Robert A. McDougall. "Reforming the European Community's Common Agricultural Policy: Who Stands to Gain?" Presented at the Conference on Analytical and Negotiating Issues in the Global Trading System, Ann Arbor, MI, October 31, 1991.

Jacquemin, Alexis and André Sapir. "International Trade and Integration of the European Community: An Econometric Analysis." European Economic Review 32 (1988): 1439-1449.

Josling, Timothy. "CAP Reform and World Agricultural Trade." Walter H. Gardiner and David R. Kelch, eds. EC 1992: Perspectives on Agriculture. AGES 9043. U. S. Dept. of Agriculture, Economic Research Service. May 1990.

Kelch, David. "Europe 1992: Implications for Agriculture", Western Europe Agriculture Trade Report. RS 89-2. U. S. Dept. of Agriculture, Economic Research Service, July 1989.

Kelch, David. "Harmonization of the Internal Market and Implications for Intra-and Extra-EC Agricultural Trade." Walter H. Gardiner and David R. Kelch, eds. EC 1992: Perspectives on Agriculture." AGES 9043. U. S. Dept. of Agriculture, Economic Research Service. May 1990.

Kelch, David and Terri Raney. "Europe 1992, GATT and Food Safety: How will U.S. Agriculture Fare?" Agricultural Outlook. AO-159. U.S. Dept. of Agriculture, Economic Research Service, December 1989, pp.33-36.

Krueger, Anne. "The Political Economy of the Rent-Seeking Society." American Economic Review 64 (1974): 291-303

Lueck, Dale and David Kelch. "Political and Economic Factors Influencing Agricultural Policy Reform in the European Community and the Untied States." Canadian Journal of Agricultural Economics, 37 (1989):1181-1191.

McClatchy, D. and T.K. Warley. "Agricultural and Trade Policy Reform: Implications for Agricultural Trade." Presented at the XXI Congress of the International Association of Agricultural Economists, Tokyo, Japan, August 22-29, 1991.

Meat and Livestock Commission of the United Kingdom. Meat Market Review, London. Several issues.

Moyer, H. Wayne and Timothy Josling. Agricultural Policy Reform, Politics and Process in the EC and USA. Ames, Iowa: Iowa State University Press, 1990.

Nielsen G. "La Production y el Comercio de Carne Vacuna en la CEE." Unpublished, Argentine Embassy to the EC, Brussels, 1986.

Ritson, C. and Stephan Tangermann. "The Economics and Politics of Monetary Compensatory Amounts." European Review of Agricultural Economics 6 (1979): 119-164.

Roningen, Vernon O. and Praveen M. Dixit. "Assessing the Implications of Freer Agricultural Trade." Food Policy 15 (1990):67-75.

Sapir, André. "Does 1992 Come Before or After 1990? On Regional Versus Multilateral Integration." In The Political Economy of International Trade. R.W. Jones and A.O. Krueger, eds., Cambridge, MA: Basil Blackwell, 1990, pp. 197-222.

Simpson, James and Donald Farris. The World Beef Business. Ames, Iowa: Iowa State University Press, 1982.

Tangermann, Stephan. European Agriculture in the 1990s: Internal Reforms, 1992 and External Pressures. J.S McLean Lecture, University of Guelph, Ontario, Canada, February 1990.

Tracy, Michael. Government and Agriculture in Western Europe, 1880-1988, 3rd ed. New York: New York State Press, 1989.

Tsolakis Dimitris and Terry Sheales. Effects of EC Beef and Dairy Policies on Beef Supply, Demand and Trade in the European Community. Discussion Paper 90.9. Australian Bureau of Agricultural and Resource Economics, 1990.

U.S. International Trade Commission. The Effects of Greater Economic Integration Within the European Community on the United States. First follow-up report. Washington DC: USITC Publication 2268, March 1990

Von Witzke, Harold and Claus Hennig Hanf. "BST and International Agricultural Trade and Policy." Unpublished Manuscript, St. Paul: University of Minnesota, March 1991.

This material is based in part on work supported by the U.S. Department of Agriculture, Cooperative State Research Service, under Agreement No. 89-34210-04238 and successor(s).

Any opinions, findings, conclusions, or recommendations expressed in this publication are those of the author(s) and do not necessarily reflect the view of the U.S. Department of Agriculture.

Additional information on NC-194 and a complete list of project publications can be obtained from:

Executive Director, NC-194
Department of Agricultural Economics
The Ohio State University
2120 Fyffe Road
Columbus, Ohio 43210-1099
(614)292-2194