A CASE STUDY IN PROTECTIONISM: BRITISH AND FRENCH POULTRY TRADE, 1978-1982

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THE UNIVERSITY OF ARIZONA M.S. 1984

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A CASE STUDY IN PROTECTIONISM:
BRITISH AND FRENCH POULTRY TRADE, 1978-1982

by

Anthony Clint Crooks

A Thesis Submitted to the Faculty of the

DEPARTMENT OF AGRICULTURAL ECONOMICS

In Partial Fulfillment of the Requirements
For the Degree of

MASTER OF SCIENCE
WITH A MAJOR IN AGRICULTURAL ECONOMICS

In the Graduate College

THE UNIVERSITY OF ARIZONA

1984

STATEMENT BY AUTHOR

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Eric A. Monke — Nov 19 1984

ERIC A. MONKE — Date

For JODI KIM and KATELYN JEAN

ACKNOWLEDGEMENTS

I alone am responsible for the contents of this manuscript. I am however, obliged to many patient and supportive people who kindly assisted me as I struggled to understand the complexities of the nontariff barrier issue. Among the throng, are the members of the International Trade Policy Division of the USDA Foreign Agricultural Service. In particular, I wish to thank John Hudson and JoAnn Halquist for the priviledge of working under their supervision during the summers of 1982 and 1983. Thanks also to my colleagues Robert Knapp, Mary Revelt and especially Kerry Reynolds whose counsel and companionship made my stay in Washington most memorable. What I learned from you all proved to be the foundation of this work.

A wealth of statistical information was provided by the International Economics Division of the USDA Economics Research Service . Thank you Mike Herlihy, Steve Magiera and Dale Leuck for your generous support in this regard. Mike Dwyer of the International Agricultural Statistics Division (FAS), also provided significant trade information. A special thanks also to Bill Filmer of the The Eggs Authority, Jim Holton of the National Farmers Union and John Strak of the University of Manchester who

graciously provided statistical and other valuable information from across the Atlantic. The hours which you gentlemen invested spared me countless more. I am genuinely grateful.

This year completes my sixth year of attendance at the University of Arizona. Five of which, I have been employed in some fashion or another by the Department of Agricultural Economics. It is mildly understated to say that I have made friends and learned much here. I am grateful to Gerald Korzan who enthusiastically introduced me to the discipline, and to Roger Selley whose encouragement and supportive instruction through the years has helped to foster my interest and economic inquiry.

I wish to thank the members of my graduate committee Gordon Ball and Jimmye Hillman for their helpful comments on this manuscript. Thank you especially Dr. Hillman for your concerned support and gentle guidance these past six years.

Apart from the direction and encouragement of Eric Monke, this work could still be a bramble of "good ideas". Any clarity and precision which might be ascribed to this work is a result of your gudiance and skillful editing Eric, thank you.

My greatest debt by far however, is to my colleague Mark Lynham. His willingness to tackle the NTB issue, after many others had failed, challenged me to follow. His

inquiry and reccommendation lead to my appointment as an Intern Economist with the FAS in Washington. It was his investigation that even provided me with this thesis topic. And if all of this wasn't enough, the illustrations and graphics within this manuscript are also his workmanship. Thank you Mark, the words of Christ are surely exemplified in your life, "the greatest among you shall be your servant."

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ABSTRACT

The use of nontariff barriers (NTBs) to restrict international trade has become an increasingly prominent practice over the past 20 years. Health and sanitary regulations are one of the most common forms of NTBs in agricultural commodity trade restricting market entry under the guise of consumer health protection. The British-French poultry trade war demonstrates the efficacy of this type of policy. During the early 1980's, the British government imposed what was later ruled to be an arbitrary and unneccessary health ban on imports of poultry. This restriction shielded domestic producers from foreign competition for 16 months. The British justified their action as a response to the unfair French use of domestic production subsidies. This thesis describes the circumstances of the poultry trade war and estimates the economic impacts of the ban on British producers and consumers. The countervailing duty is analyzed as an alternative trade policy and is shown to be a more effecient way of offsetting domestic production subsidy policies of other nations.

CHAPTER 1

INTRODUCTION

The use of administrative policy to restrict international trade is particularly prominent in agriculture, where nontariff barriers often have served as policy instruments to raise prices and thus increase domestic farm incomes (Hillman, 1978). Previous studies to estimate the effects of nontariff trade barriers (NTBs) have been hindered by the issue of administrative intent, especially in the case of health and sanitary regulations. In theory, such regulations protect domestic consumers from unnecessary health risks, but in practice, the regulations can also serve as a barrier to market entry. The case of English poultry trade barriers falls clearly in the latter category. During the early 1980s, the governments of France and the United Kingdom were in a battle to protect their respective farmers from cross-Channel imports. Throughout the 1980-1982 period, the British government protected its domestic poultry producers by imposing arbitrary and unnecessary health regulations to restrict imports.

At the same time, French poultry producers received generous subsidization from their government, and British import restrictions may have been used as a way to offset French subsidies. Thus, the issue of NTBs involves not only the trade policies of the two nations, but also the larger set of policies to which both nations subscribe because of their membership in the European Community (EC). Episodes of trade subsidization and trade retaliation may be at least partially a consequence of the tariff prohibition clause in the Common Agricultural Policy (CAP). The failure of the CAP to simultaneously limit domestic policies of taxation and subsidization to agriculture may encourage subsequent use of trade restrictions among other members.

This thesis describes the circumstances and impacts of the poultry trade war between the UK and France, a single event in a series of trade retaliations between the two nations. Chapter 2 provides an overview of the EC poultry industry by protraying the evolution of the industry and by describing present EC poultry policy. Information about national poultry policies and poultry industry characteristics in the UK and France are provided in Chapter 3. Chapter 4 quantifies the effects of trade and domestic tax/subsidy policies upon each nation's poultry sector. An alternative trade policy, the countervailing duty, is demonstrated to be an efficient way to offset a trade

distorting policy such as subsidized production. Chapter 5 reviews the results of the analysis and discusses the possible restoration of a limited tariff policy as a means to furthering the free trade objectives of the EC and to improve resource allocation.

The Great Poultry War

Since the UK's accession into the EC, the objectives of French and UK agricultural policy have conflicted frequently. In the poultry industry, French entrepreneurs secured various forms of government assistance to establish large, efficient packing houses on the Brittany penninsula, hoping to take full advantage of a growing British poultry market. British producers, aware of their growing inability to compete with the French, protested against the French government subsidies. The British National Farmers Union (NFU) mounted a vigorous campaign against poultry imports, charging that French turkeys were sold in Britain at 9 pence below British production costs and that French subsidies of producers were responsible for such extraordinary sales prices.

On August 27, 1981, Britain's Minister of Agriculture announced a precautionary measure to prevent the spread of Newcastle disease in the United Kingdom (UK):

> From September 1 a compulsory slaughter policy is being re-introduced in the event of any future

> outbreaks of Newcastle disease (fowl pest) while the use of vaccine will be prohibited. At the same time, imports of poultrymeat and eggs will be permitted only from countries which are free from Newcastle disease, which ban the use of vaccine and which also apply compulsory slaughter in the event of an outbreak of the disease. (AgraEurope, 1981)

The ban had little to do with disease infestation, since Britain had been free from Newcastle's disease for five years prior to the announcement. Further, turkeys are not susceptible to Newcastle's disease. Of greater significance was the commercial impact of the ban. The trade restriction eliminated every form of poultry trade to the UK for all but three countries. Only Ireland, Denmark and Sweden could comply with the new trade requirements. Britain's ban of vaccinated poultry prevented French delivery of about 2,000 mt of frozen broilers, 3,000 mt of whole turkeys, 3600 mt of turkeymeat as well as 100 million eggs over the two year period of the imposition.

Health regulations are the most attractive form of NTB. The EC allows member states to institute health regulations at stricter levels than called for in the Common Agricultural Policy. Formal complaints under the General Agreement on Tariff and Trade (GATT) are also discouraged if the restriction applies to all potential exporters and is used for health considerations rather than domestic market protection.

Nevertheless, the European Commission took the UK to the European Court. The Commission argued that the ban was unjustified by the "extent of its coverage and the absolute nature of its effect" (AgraEurope, 1982) Denmark, for example, operates a similar restriction for Newcastle vaccinated poultry, but its controls are more flexible as it maintains a vaccine check at the border. Second, because British producers may slaughter and market their own vaccinated birds, the action was clearly discriminatory. The UK was itself not free of vaccinated poultry as late as 1982. Finally, the ban was not phased in over time in order to provide exporters a reasonable adjustment period comparable to that of the British producers; it was imposed only four days after the announcement.

French poultry exporters did not wait for time-consuming court action to attempt reentry into the British poultry market. Instead, French exporters moved to comply with the UK import conditions. Their efforts were to no avail. French poultry was not allowed inside the UK until November 8, 1982, almost a year after the French plants complied with the new restraints. British officials refused to certify French compliance with the new regulations and maintained the poultry ban as long as the case was in litigation with the European Court.

The European Court of Justice used the French example as evidence supporting its July 15, 1982 judgement against the UK. The Court ruled that the ban was not part of a seriously considered health policy, but "a thinly disguised import restriction whose real aim was to 'block for commercial reasons ..., imports of poultry and poultry products from other member states, particularly France.'" (AgraEurope, 1982a) Had the UK been acting out of concern for animal health, it would have reopened its market after French producers had met the three conditions laid down by the UK government.

In addition, the UK's action was judged a violation of the legal principle of proportionality, since the damage against trade exceeded any potential benefits to animal health in the UK. The ban did not originally apply to exotic birds which pose a greater threat of infestation than vaccinated poultry. Furthermore, the Commission argued that outbreaks of the disease had fallen dramatically in all member states even in countries where some birds had not been vaccinated.

The EC Commission ordered the UK to restore trade on 15 July 1982. After the judgement, the British used a series of negotiating positions to secure its borders long enough to reserve the 1982 Christmas trade exclusively for its domestic industry. In total, 16 months of protection,

including two Christmas seasons, was secured for the British industry by the poultry import ban.

CHAPTER 2

THE POULTRY INDUSTRY IN THE EC

Toward the end of the 1960s, the EC poultry industry began a period of sustained growth and change. Poultry products increased in popularity within the Community, as technological change increased firm size and fostered lower output prices. EC poultry began to account for a significant share of world trade as a result of CAP export restitutions, a trend that continued as long as the EC Commission remained a willing financier. However, total CAP expenditures have become substantial in recent years, and the continuation of the current level of export subsidies is doubtful.

Aggregate Changes, 1970-1980

Aggregate annual statistics for production, consumption and trade during the 1970-80 period are presented in APPENDIX A. They suggest a steadily growing EC poultry industry. Consumption increased at an annual rate of 3 per cent from 2.6 to 3.6 million metric tons (mmt). Increases

in production were slightly greater at 3.9 per cent (2.7 - 3.9 mmt). EC exports grew at an annual rate of 5.8 per cent from 330,000 to 614,000 mt. In the 1960s, the EC was the largest importer of poultry. By 1980 it surpassed the US as the world's leader in poultry exports.

Poultry producer prices decreased in real terms throughout the 1970s. Table 1 presents comparative data for two representative periods of EC poultry production. Although nominal producer prices increased 42.5 percent since 1971, real prices decreased by 42.4 per cent. Further, real output prices declined more rapidly than feed prices, indicating the significant amount of technical change and cost reducing innovation that occurred during the period.

Changes in Community feed prices were not consistent with changes in the world prices. Food and Agricultural Organization (FAO) trade statistics indicate a 3 per cent decrease and a 21 per cent increase in the real world prices of feed maize and barley, respectively, during 1971-1980 period.[1] In contrast, real EC threshold prices for maize

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1. $107.07 to $103.98 for maize; $87.27 to $110.70 for barley f.o.b. sales / volume (1975 base year)

Table 1 Changes in Real EC Poultry Producer Prices, 1971-72 Average and 1981-82 Average

	1971-72	1981-82	% change
		ECU/100 kg	
Output price	79.70	138.71	42.5
Real output price	115.50	88.11	-42.4
Output price/feed price	6.79	5.49	-23.6

Source: USDA, Economics Research Service

Nominal prices are adusted by the GDP price deflator (1975=100) taken from the International Monetary Fund, IMF Yearbook, 1983.

and barley increased by 15.8 and 16.3 per cent for the same period[2].

Historically, EC poultry production was highly labor intensive and operated on a small scale. Almost every farm had a small flock of chickens to provide eggs and occasionally meat. Tending chickens was a spare time activity usually conducted by the farmer's wife. Feed was provided from on-farm sources and the only off farm expenses involved chicks and fencing wire.

Increasing feed prices, increasing opportunity costs for labor and decreasing output prices hastened the decline in small scale production, and EC poultry production became an increasingly industrial activity. Buildings with ventilation systems and climate control allowed chickens to be raised on a continuous basis. Bulk feeders significantly reduced labor costs for larger operations. Labor costs in egg production were reduced by the development of mechanized collectors, sorters and packagers. Advances in poultry husbandry resulted in faster-growing and higher-laying birds. Nutrition research developed rations for specific bird types at particular stages of growth. Vaccinations and

---

2. $138.78 - $164.90 for maize; $138.04 - $164.90 for barley evaluated at exchange rates of $1.0222 / ECU for 1971 and $1.3923 / ECU for 1980 (1975 base year)

the addition of antibiotics to feeds reduced the incidence of disease related mortality. As a result of these developments, the average poultry feeding efficiency increased by 25 percent during the 1970s.

The data presented in Table 2 demonstrate the movement toward consolidation. The average number of poultry producers decreased by 13 percent (1.698 to 1.469 million producers) while average firm size increased 27 percent (140 to 178 broilers per holding). Of the nine member states, six had significant reductions in numbers of broiler holdings during the 1970s and five realized an increase in the number of broilers per holding. All countries except France moved toward a more concentrated poultry sector.

Decreases in poultry prices relative to other meats and growing per capita incomes greatly encouraged poultry consumption. EC poultry consumption increased 184 per cent (1.3 to 3.6 mmt) from 1960-1980. Although pork consumption is three times greater than poultry consumption, the latter has increased two and one-half times faster than pork since 1960. Per capita pork consumption increased from 24.3 to 37.9 kg/yr, while per capita poultry consumption increased from 5.5 to 13.9 kg/yr. Per capita beef consumption increased by 25 per cent during the period (20.8 to 25.9 kg/yr).

Table 2 Broiler Distribution by Holding, EC and Member Countries, 1970 and 1980

	1000s of holdings		broilers/holding	
	1970	1980	1970	1980
Netherlands	3	2	10,735	17,686
United Kingdom	8	4	6,071	12,755
Denmark	6	3	1,089	2,470
Belgium	12	7	908	1446
Germany	30	99	731	182
France	775	537	706	106
Ireland	10	11	308	373
Luxemburg	.5	1	79	16
Italy	852	805	70	84
EC-9	1698	1469	140	178

Source: USDA, Economic Research Service.

Table 3 summarizes the changes in producer prices, per capita incomes and per capita poultry consumption in EC member countries between 1960 and 1980. In 1960 poultry producer prices were higher than beef prices in every member state and exceeded pork prices in all but three. By 1975, poultry prices were the lowest priced meat in every country. Price differences between poultry and the next lowest meat ranged from 15.83 ECUs/100 kgs in Ireland to 31.01 ECUs/100 kgs in Belgium-Luxemburg. In 1980, cattle prices were greater than poultry prices by a range of 33 to 81 per cent, and pork was priced higher than poultry by as much as 70 per cent.

Real per capita income for the EC increased over 80 per cent during the two decades. Germany experienced the greatest increase in income (230 per cent). Belgium, Denmark, France and the Netherlands realized similar increases. Italy, Ireland and the United Kingdom, however, saw no significant increases. Real per capita income in the UK was actually less in 1980 than it was in 1960. But even in these countries, poultry consumption increased in response to falling relative prices. In Ireland and Italy, producer prices dropped 419 and 436 per cent respectively, while per capita consumption increased by 169 and 285 percent.

Table 3 Real EC Cattle, Pork and Poultry Producer Prices, Per Capita Income, and Per Capita Poultry Consumption Five Year Intervals, 1960-1980

	Bel-Lux	Denmark	France	Ireland	Italy	Netherlands	UK	Germany	EC-9
1960									
Cattle prices[1]	83.36	100.24	88.94	104.99	144.65	109.20	102.91	88.86	100.18
Pork prices[1]	99.08	133.96	123.12	149.26	124.66	113.02	131.08	105.83	133.51
Poultry prices[1]	92.90	156.84	155.89	221.98	243.04	111.11	138.20	105.04	150.57
Per capita income[2]	2482	3706	2916	1947	1978	2362	3618	2402	2599
Per capita poultry consumption[3]	6.02	3.28	9.04	5.35	4.61	2.0	5.65	4.19	5.47
1965									
Cattle prices	101.36	92.69	110.89	100.16	136.96	119.14	96.38	93.16	107.63
Pork prices	102.51	106.89	118.86	121.97	119.97	101.97	101.53	104.18	118.49
Poultry prices	84.62	105.98	94.93	126.40	197.10	87.93	98.56	89.62	112.58
Per capita income	3040	4525	3605	2262	2395	2901	3863	2970	3114
Per capita poultry consumption	7.5	3.4	10.4	6.6	8.3	3.7	7.1	5.8	7.5
1970									
Cattle prices	98.26	74.59	74.48	83.89	134.33	110.15	102.41	89.86	99.53
Pork prices	87.81	88.87	63.35	94.47	137.09	92.00	93.36	87.65	119.32
Poultry prices	70.24	68.20	55.72	87.47	154.68	65.00	74.61	61.07	85.66
Per capita income	3969	5147	3067	2421	3245	3728	4010	4112	3801
Per capita poultry consumption	8.7	5.07	12.15	9.83	11.7	5.86	10.86	8.38	10.09
1975									
Cattle prices	99.08	94.07	100.54	76.87	122.91	111.33	73.21	114.22	99.94
Pork prices	103.07	88.03	95.56	85.66	98.08	102.40	79.07	112.42	102.32
Poultry prices	68.07	61.35	69.98	61.04	96.66	58.69	56.58	64.54	71.72
Per capita income	5211	6000	5162	2092	2774	4904	3350	5489	4299
Per capita poultry consumption	9.9	7.7	14.1	10.4	16.4	7.0	11.3	9.1	12.1
1980									
Cattle prices	102.89	77.45	79.70	56.79	69.48	104.46	62.17	114.74	86.59
Pork prices	80.29	66.05	67.60	53.86	54.53	75.90	70.89	96.04	73.67
Poultry prices	61.41	51.13	50.80	42.76	45.30	57.67	41.52	78.25	56.67
Per capita income	6631	6518	5442	1972	2231	6394	3386	7938	4761
Per capita poultry consumption	13.01	8.2	16.7	14.4	17.89	8.93	13.85	9.84	13.91

Source: USDA, Economic Research Service.

Notes: [1] Prices expressed as 1975 ECUs / 100 kg
[2] Income data expressed as 1975 ECUs
[3] Consumption data expressed in kilograms

Poultry and the Common Agricultural Policy

Regulations 2771/75 and 2777/75 of November, 1975, created a single market for eggs and poultrymeat within the EC. No direct intervention exists for poultry and eggs and producers within the Community are protected from third country imports by a sluicegate price policy and variable levy. EC poultry producers require protection because of the cost disadvantages that result from the feed grain price support system. If the world price falls below the sluicegate price, a variable levy is introduced to maintain the desired amount of protection at the frontier.

The sluicegate price is intended to represent the price at which third country products should be presented at the EC frontier. They reflect the costs of production and marketing a product outside the EC and are fixed in advance on a quarterly basis. The price is calculated as the sum of the cereals element, the standard amount, and a basic levy. The cereals element is the cost on the world market of the theoretical amount of feed grain required to provide 1 kg of product using the EC specified ration. A flat rate .5743 ECU / 100 kg in 1982 is added to this amount to account for transport costs.

The representative cereals ration consists currently of 80 per cent maize and 20 per cent barley. EC threshold prices in Marketing Year 1982/83 for maize and barley were

223.27 and 179.27 ECUs/mt, respectively. The cereals element for that time would be:

.8(22.327) + .2(17.927) + .5743 = **22.0213 ECU/100kg**

The cereals element is then multiplied by a feed conversion ratio (FCR), which represents the prescribed amount of feed to produce 1 kg of product (dressed weight) in the EC market.

The standard amount covers the cost of other feeds and general production and marketing costs. These costs include protein, vitamin and mineral supplements, chicks, labor, energy and depreciation on equipment. APPENDIX B lists feed conversion factors and standard amounts for egg and poultry.

The cereals element and standard amount are added to a basic levy to determine the final entry (sluicegate) price for poultry imports. The basic levy is calculated quarterly and has two elements, an amount accounting for the difference between world and Community cereals prices (Element A), and a protective element (Element B). Element A of the basic levy is calculated by taking the difference between the average threshold price and the world price for cereals weighted according to the prescribed cereals ration and multiplied by the feed conversion ratio. Element B of

the basic levy is an amount equivalent to 7 per cent of the average sluicegate price for the four quarters preceding May 1. Once calculated, the basic levy is constant until the next August 1.

The amount of protection given by the sluicegate price is a function of the base, the feed conversion ratio and the standard amount. Opportunities for hidden protection are present within each element. The use of a fixed FCR, for example, helps to insulate producers from the price-decreasing effects of technological change. So long as the region is importing poultry at the margin, reduced production costs by increasing feeding efficiency (reducing the actual relative to the "official" FCR) increases profits for EC poultry producers rather than reducing prices for consumers.

The use of a prescribed cereals ration also locks into the pricing mechanism a component which is unable to adjust to future changes in technology. Poultry producers regularly substitute nongrain feeds (NGFs) such as oilseed meals, cassava, and corn gluten as well as other feed grains for maize and barley depending upon relative price movements. Substitution of NGFs is particularly significant within the EC because, in general, these products are not subject to the variable levy and are purchased at world

prices.[3] APPENDIX C presents EC average feed use in 1964-1965 and 1978-1979 to illustrate the signifcance of feed substitution.

The level of protection provided by Element A of the basic levy can be measured as the cost difference between state of the art feed technology and the Element A ration. Table 4 compares the Element A feed mix price with an alternative feed mix that reports a 10 per cent improved feed conversion relative to the EC feed conversion ratio for "70% chicken". Element A provides a 13 percent rate of protection for producers who use a 15 percent casava, 20 per cent soymeal and 65 percent corn gluten feed mix.[4] Since feed costs typically represent 91 per cent of total production costs, pricing policy translates into a significant degree of effective protection for domestic producers.

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3. An import levy of 25 per cent of the barley levy plus .25 ECUs/ 100 kg is imposed against cassava meal. Cassava pellets are charged 18 per cent of the barley levy and no fixed rate. EC officials would like to restrict corn gluten imports. The United States however, is the major importer of corn gluten and has used political leverage to keep imports unrestricted.

4. Although cassava is the most expensive of the NGFs, industry sources report that consumption declines if feed compounds contain more than 15 per cent cassava (Nelson, 1983).

Table 4 Poultry Feed Mix Cost Comparison

	Unit Price (ECU/100 kg)	Cost (ECU/100 kg)	Feed Conversion Ratio (70% chicken)	Feed Cost (ECU/100 kg)	Level of Protection, Absolute Difference and % of ELEMENT A
"ELEMENT A" of Sluicegate Price[1]					
.80 corn	20.46	20.46	2.189	44.79	--
.20 barley	20.46				--
Nonfeed Grain Substitutes[2a]					
.15 casava [b]	14.95	17.12 + [c]2.74 = 19.86	1.99	37.73	15.26 (13%)
.65 corn gluten	15.76				
.20 soymeal	21.17				

Sources: [1] Official Journal of the European Community
[2] USDA, Economic Research Service

Notes: [a] 1980 c.i.f. Rotterdam Prices
[b] includes 18 percent variable levy charge
[c] processing and transportation charges

Finally, the standard amount may also provide protection. No particular formula has been given for calculating the standard amount. The level of protection afforded by the standard amount may be evaluated as the difference between it and all non-feed costs of production. Table 5 compares non-feed costs of the U.S., France and the UK with the standard amount component of the sluicegate price. Standard amounts are not published by the official journal and must be derived by subtracting the Element A component (the August threshold price of a 80 per cent maize and 20 per cent barley mix times the 2.189 feed conversion ratio) from the August 1 sluicegate price. The standard amount exceeds all non-feed costs for all years. Differences between the two amounts range from 41 to 69.7 per cent for the U.S., 31.9 to 57.1 per cent for France and 37.4 to 66 per cent for the UK.

The CAP also provides assistance to the exporting sector of the poultry industry. Export refunds enable Community exporters to compete against third countries whose costs of poultry production are lower because of lower feed prices. The export refund is calculated in a fashion similar to that of the sluicegate price and the basic levy. Component A is a calculation of the cereal requirement for 1 kg of poultry. For 70 per cent dressed poultry a feed conversion ratio of 2.189 kg of grains is

Table 5 Comparison of Non-feed Costs and "Standard Amount" Element of Sluicegate Price, 1978-1982

	1978	1979	1980	1981	1982
	- ¢ / kg live weight -				
Standard Amount[1]	35.5	43.4	49.4	44.8	34.7
United States[2]	14.3	17.2	18.5	18.5	18.9
France[3]	36.2	35.5	33.0	34.8	32.9
United Kingdom[4]	28.8	26.9	24.8	25.1	24.6

Source: [1] Calculated from prices in the Official Journal of the European Community.
[2] USDA, Economic Research Service.
[3] Session Nationale Economie I.T.A.V.I.
[4] National Farmers' Union.

assumed, of which 80 per cent (1.752 kg) is corn and 20 per cent (437 g) is barley. These factors are multiplied by the difference between Community average threshold price and the world price for each grain to calculate the export refund.

The guidelines for fixing refunds provide a significant amount of flexibility. Export refunds may not only reflect differences in world and EC feed prices, but may also reflect market conditions in the country of destination. The allowance for "special conditions (that) apply to imports in certain countries of destination" provides freedom to set the amount of subsidy to the level necessary to make EC poultry prices less than their competitors for any given market (Official Journal of the European Community, 1975).

Table 6 provides the EC subsidy level for 70 per cent chickens for various export markets. The significance of the poultry export subsidy is illustrated by comparing per unit values of intra-traded product (between EC members) with per unit values of third country traded product. The unit values of French poultry sold to Germany, France's greatest intra-Community trading partner, ranged from $1251 per mt in 1975 to $2339 in 1980, and averaged $1798 per mt over the 7 year period. On the other hand, poultry sold to Saudi Arabia during that same period ranged from $1007 mt in 1975 to $1353 in 1980 and averaged $1143 for the 7 years.

Table 6 EC Subsidy Level for Whole Chickens, 1967-1980

70 %,[1] ECU / 100 kg dressed weight, and US$ equivalent

Effective Date		70%	$/lb.[2]	Area
1967	7/1	16.25	.07	Worldwide
	10/1	16.25	.07	Worldwide
1968	2/1	16.25	.07	Worldwide
	5/1	16.25	.07	Worldwide
	8/1	16.25	.07	Worldwide
	11/11	16.25	.07	Worldwide
1969	8/1	16.25	.07	Worldwide
	11/1	16.25	.07	Worldwide
1970	2/1	16.25	.07	Worldwide
	5/1	16.25	.07	Worldwide
	8/1	16.25	.07	Worldwide
	11/1	16.25	.07	Worldwide
1971	2/1	16.25	.08	Worldwide
	4/1	16.25	.08	Greece, Switz, USSR
		12.90	.06	Rest of world
	5/1	16.25	.08	Greece, Switz, USSR
		12.90	.06	Rest of world
	8/1	16.25	.08	Greece, Switzerland
		12.76	.06	Rest of world
	11/1	16.25	.08	Greece, Switzerland
		12.76	.06	Rest of world
1972	2/1	16.25	.07	Greece, Switzerland
		12.76	.06	Rest of world
	5/1	16.25	.07	Greece, Switzerland
		12.76	.06	Rest of world
	5/17	17.38	.09	Greece, Switzerland
		13.89	.07	Rest of world
	8/1	17.38	.07	Greece, Switzerland
		13.89	.07	Rest of world
	11/1	17.38	.09	Greece, Switzerland
		13.89	.07	Rest of world
1973	2/1	17.38	.10	Greece, Switzerland
		13.89	.08	Rest of world
	5/1	11.50	.06	Worlwide
	8/1	9.99	.06	Worldwide
	9/1	8.47	.05	Worldwide
	11/1	6.43	.04	Worldwide
1974	2/1	3.03	.02	Worldwide
	5/1	12.00	.07	Worldwide
	7/1-8/1	12.00	.07	Worldwide
	8/15	11.00	.06	Eur, Mid East, Mediterranean
	9/1	11.00	.06	Eur, Mid East, Mediterranean
	11/11	11.00	.06	Worldwide
1975	2/1	11.00	.06	Worldwide
	5/1	11.00	.06	Worldwide
	6/1	5.00	.03	Eur, Mid East, Mediterr. & Cuba
	8/1	5.00	.03	Eur, Mid East, Mediterr. & Cuba
	11/1	5.00	.03	Eur, Mid East, Mediterranean, Cuba & Africa
1976	2/1	5.00	.03	"
	5/1	5.00	.03	"
	6/1	8.50	.04	"
	11/1	8.50	.04	"
1977	2/1	8.50	.04	"
	4/15	12.00	.06	"
	7/1	12.00	.06	"
	10/1	12.00	.06	"
	11/1	12.00	.06	"
1978	2/1	15.00	.09	"
	5/1	15.00	.09	"
	5/10	22.00	.13	"
	8/15	22.00	.13	"
	11/1	22.00	.13	"
1979	2/1	22.00	.14	"
	5/1	27.00	.17	"
	6/1	27.00	.17	"
	8/5	25.00	.16	"
	11/1	25.00	.16	"
1980	1/12	22.00	.14	Worldwide except US
	4/14	19.00	.12	Worldwide except US
	10/8	18.00	.11	Worldwide except US
	12/9	15.00	.09	Worldwide except US

Source: Official Journal of the European Community.

Notes: [1] Subsidy levels are for "70%" chickens, defined as "plucked and drawn without heads and feet, but with hearts, livers and gizzards." These comprise the principal portion of EC whole chicken exports.

[2] Conversions based on average annual exchange rates provided in the General Budget

Since broilers sold to Germany are identical to those sold to Saudi Arabia (both countries purchase from the three export firms in Brittany), the difference between the two average prices approximates the average export assistance provided by the CAP -- roughly $655 per mt. The spectacular growth of aggregate export subsidies is portrayed in Figure 1. APPENDIX D lists the amount of EC expenditures on poultry meat and the US dollar equivalent from 1967-1980. Poultry expenditures increased at a compound annual growth rate of 23 per cent or 2283 per cent over the entire period.

Summary

The EC poultry industry can expect consolidation to continue, barring future economic assistance to small holders from either the CAP or member governments. Real feed grain prices have decreased since 1971, but output prices relative to feed prices have declined 21 per cent. These price declines have occurred in spite of an effective rate of protection of 21 per cent provided by sluicegate pricing policies. And while the high level of EC grain prices has promoted the substitution of other feeds at maximum levels of technical feasibility, producer profit margins continue to decline. Substitution efforts have only dampened, not altered, recent trends. On a brighter note,

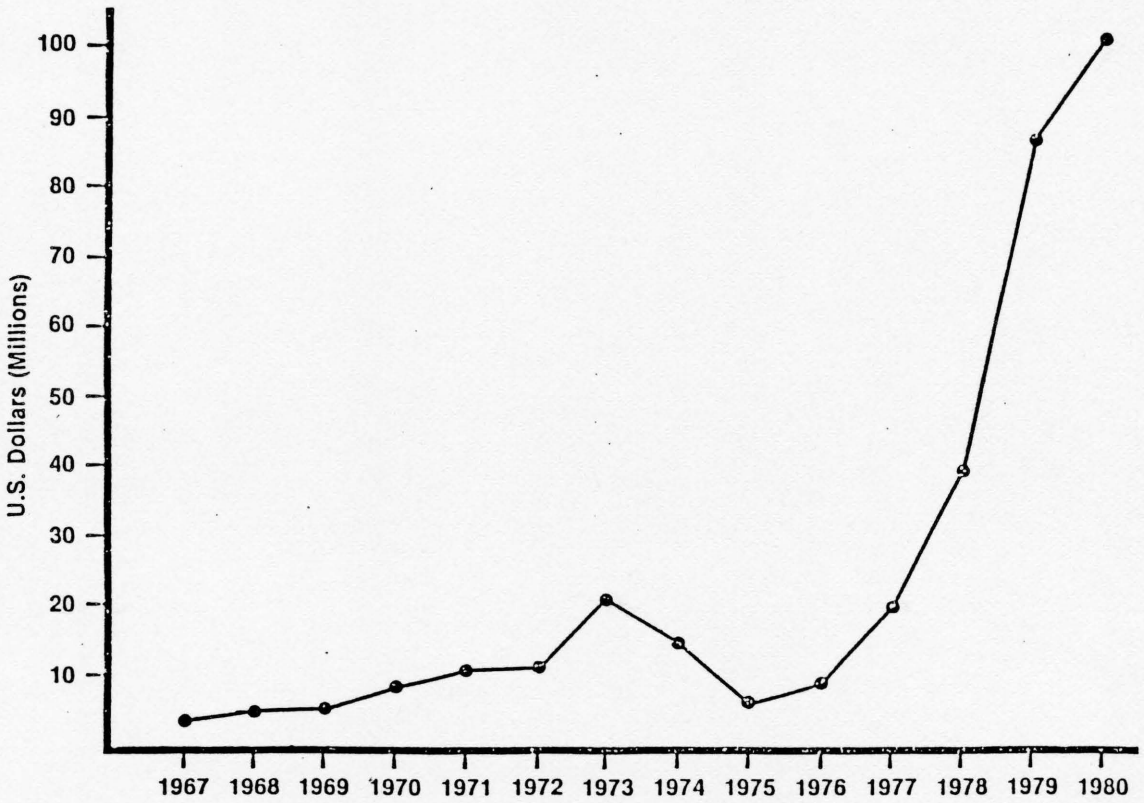

Figure 1. EC expenditures on direct export subsidies for poultry meat, 1967-1980

per capita poultry consumption increased by 154 per cent (5.47 - 13.9 kg/yr) from 1960-1980 and population grew 13 per cent (231.45 to 261.17 million). Domestic consumption increases are likely to continue, as increases in real incomes are likely to further augment consumption levels.

Poultry export policy will have the most significant effect upon the EC industry at the margin. In 1978, the EC sold a fourth of the world's poultry, and by 1983, the EC accounted for one third of world trade. Future EC poultry exports depend on the level of the export restitution and therefore hinge upon the EC Commission's willingness to subsidize world poultry prices. This is tenuous ground at best, given the present financing problems of the CAP. Recently, poultry exporters claim to have had to bargain for the restitution instead of automatically receiving the full amount as calculated by the EC Commission's formula (USDA,FAS, 1980).

Some poultrymen have proposed to do away with the restitution in exchange for the right to import grain at world prices. Third country exports would be reduced by this policy, because EC exporters would no longer have the CAP subsidies in export markets. In the short run producers would probably try to divert some third country trade to

markets within the EC. In this event the British poultry ban may foreshadow future discriminatory embargoes by other member states, as they attempt to shield domestic producers against expanded intra-EC trade.

CHAPTER 3

COSTS AND RETURNS TO BRITISH AND FRENCH POULTRY PRODUCTION

Public assistance to the agricultural sector has greatly influenced the development of the poultry industries of France. The French government supports the poultry industry, particularly the export broiler industry, with subsidized credit, export refunds, market adjustment assistance and direct payments to producers. In addition to these programs, producers for domestic consumption are assisted with supply management policies and trademarking (i.e., quantitative and qualitative controls), that artificially support prices. These provisions have delayed economic consolidation in the industry; in contrast to other EC countries, French poultry production is less concentrated and more dualistic now than in 1970.

In contrast, the austere British budget provides little economic assistance to agriculture and no specific programs apply to the poultry industry. Partly as a consequence, the UK now has the second most concentrated poultry industry in the EC. From 1970 to 1980 the number of farms that produce broilers fell by half, while the number of broilers per farm increased by 110 per cent.

This chapter presents an overview of the poultry industries of France and the UK, giving special attention to the political and economic environment of each country's industry. The effect of national policies upon each nation's poultry sector is quantified within a framework that evaluates private and social costs of inputs.

The French Poultry Industry: An Overview

France's poultry industry accounts for one-fourth of total French meat production. In 1982, French poultry output was 1.211 million mt, up 106 per cent from 1970. Turkey meat production increased steadily (114 to 236 thousand mt), but represents a minor share of poultry production. Broilers account for 93 percent of the absolute change in poultry production since 1970, as broiler production increased by almost 100 per cent (428 to 855 thousand mt).

Despite the marked increase in broiler production, the French industry remains dualistic. Table 7 provides data on the structure of the poultry industry as of 1980. Domestic markets are supplied by small (less than 5,000 birds per holding) rural producers, a sector that has changed little since France's accession to the Community. In 1970, there were an estimated 775,000 holdings with 706 birds per holding. By 1980, the number of estimated holdings

Table 7 Profile of French Broiler Farms, 1980

Farm size, by poultry numbers	Number of farms (1000s)	Number of broilers per farm (1000s)
25,000 or more	.6	24,259.1
10,000 - 24,999	1.7	26,588.8
5,000 - 9,999	1.9	12,938.0
1 - 4,999	448.6	15,234.5
Total	452.8	78,020.4

Source: USDA, Foreign Agricultural Service.

had decreased 71 percent to 537,000, with only 106 birds per holding. Presently, 1900 farms hold between 5,000 and 9,000 birds and 448,600 farms (99 per cent of all holdings) house less than 5000 birds. In contrast, a regionally concentrated, integrated, and capital intensive broiler sector exists exclusively for exporting. The French 1980 Census of Agriculture estimates that 80 percent of the nation's flock is on 1 percent of all the poultry farms (4,200 farms). These farms hold an average of 15,000 birds per farm and are located principally on the Brittany peninsula.

The output of the two broiler sectors differs markedly. Traditionally, French consumers purchase an undressed chicken from the local butcher, who then removes head, feet and bowels and singes the pin feathers. Export broilers, however, are comparable to the US "frozen ready to cook." Only 10-15 percent of the export product enters the domestic market, largely through frozen food distributors for institutional use. This dichotomy between domestic and export markets also explains why French poultry imports generally are limited to specialty items and bilateral agreements. Annual poultry imports have never exceeded 17,000 mt.

In general, the more intensive production operations are confined to the Brittany peninsula. Brittany's climate

and rough terrain favors livestock production, and the region has several good shipping ports that historically have received all French feed grain imports. Thus feed compounders found it advantageous to locate in Brittany.[1] Brittany now accounts for more than half of France's pork, 40 percent of its milk and eggs, one third of its beef production, and all exported broilers.

Poultry production in other regions is intended for domestic consumption. French culinary preference and political agrarianism have enabled small poultry producers to thrive. The principal product of these operations is the "Poulet Label Rouge". Production of this broiler requires extensive time and resources, but receives a premium over other types. The standard broiler slaughter age ranges from 43 to 50 days, while the Label is 90 days old. Standard broilers range from 1.4 - 1.78 kg at slaughter; the Label weighs 2.15 kg. Poultry housing densities are as high as 22 broilers per sqare meter, but Labels are restricted by law to no more than 10 birds per square meter. Feed type and veterinary care are also subject to legal restrictions. While production costs are

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1. Proximity to these ports has become less important in recent years because the variable import levy on grain has simultaneously restricted grain imports and increased domestic supplies.

relatively high and the number of rotations per year is relatively low, the returns are often 2 - 3 FF/ kg above those for standard broilers.[2]

The French broiler export industry is dominated by three firms, all located within 100 km of Brest. The three firms are privately owned, and have formed a consortium to take advantage of shipping economies and to minimize the risk of purchase order fluctuations. The largest firm owns two cargo ships. Shipments from these plants are large enough to fill entire vessels and range from 4,000 to 6,000 mt.

Broiler exports increased from 17,000 mt in 1964 to 52,000 mt in 1974 (APPENDIX E). During this period, France traded mostly with its European neighbors and expanded its market in the Caribbean. After 1974, a Middle East marketing program was initiated with export subsidy assistance provided by the European Community. Broiler exports increased from 80,000 in 1975 to 324,000 mt by 1982. Five nations in the Middle East have become increasingly important trading partners -- Saudi Arabia, Yemen, Iran, Kuwait and the United Arab Emirates. Export

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2. The number of Labels that a single producer may raise at one time is limited. To ensure that each bird receives the care commensurate with the "Label" standard (a rationale for production control), only 100 Labels may be produced per farm per production period.

market shares of this group grew from 6 percent of French exports in 1974 to 47.3 percent in 1982; an estimated sales value of $242.6 million. Saudi Arabian purchases of French poultry increased from $3.3 million in 1974 to $110.6 million for 1982. These figures represent a jump in the French share of the Saudi Arabian market from 3 to 25 per cent (APPENDIX F).

Costs and Returns to French Production

Table 8 presents data on annual average costs of production for the years 1978 to 1982. The data were obtained from Session Nationale I.T.A.V.I. (APPENDIX G) and are deflated and converted to 1980 dollars. Total costs were greatest in 1980 but decreased 12 per cent ($1.09 to .97 per kg liveweight) from 1978-1982. Variable costs declined 14 per cent ($1.014 to .886 per kg liveweight) largely because of declines in feed and chick costs (feed and chicks comprise 81 percent of total costs). All variable cost items decreased except utilities (up 70 per cent, $ .024 to $.041/kg live weight) and disinfecting ($.003 to .004 / kg live weight). Fixed costs increased 8 percent despite, decreasing building and equipment costs. Rising interest costs (a 28 percent increase from $.21-.27 / kg live weight) outweighed declines in equipment prices. Although nominal interest rates climbed from 8.5 to 13 per

Table 8 Real Costs of Production
Chicken, Less Than 16 weeks, Live Weight
FRANCE, 1978-1982

	1978	1979	1980	1981	1982
			- 1980 $ / KG -		
FIXED COSTS					
Amortization	.056	.051	.052	.050	.054
Interest	.021	.025	.019	.022	.027
Other	.006	.007	.009	.009	.009
Total fixed	.083	.083	.080	.081	.090
VARIABLE COSTS					
Chicks	.209	.208	.181	.176	.168
Feed	.734	.721	.689	.671	.649
Utilities	.024	.032	.036	.059	.041
Veterinarian	.018	.013	.012	.010	.009
Disinfecting	.003	.003	.002	.004	.004
Labor	.018	.013	.016	.015	.013
Management	.009	.003	.002	.003	.003
Total variable	1.014	.993	.938	.938	.886
Total cost	1.097	1.076	1.018	1.019	.976

Exchange rate: FF = $.235 (1980)

Source: Session National Economie I.T.A.V.I.

Costs are adusted by the GDP price deflator, taken from the International Monetary Fund, Yearbook, 1983.

cent, real interest rates fluctuated between 1 and -1 per cent.

Revenues from the sales of broilers are not published. Approximate returns are calculated using FAO trade statistics. Table 9 presents these per unit values for the period 1978 - 1982. French sales abroad increased 235 per cent from 208 to 703 thousand mt over the 5 years, an annual rate of 19 per cent. Per unit values averaged $1.35 / kg dressed weight. Producer profit is calculated by subtracting estimates of transport[3] processing and production costs from the per unit value. Profits averaged $.1074/ kg live weight for the period. Unit values were low enough in 1982 for producer costs to exceed returns on average. The impact of the Newcastle ban is not an unreasonable explanation for lower returns. Broiler exports that were redirected from British markets would become

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3. Transport costs include Monetary Compensatory Amounts (MCAs). MCAs were installed in 1969 as a stop gap measure after the devaluation of French currency and the revaluation of German currency threatened to undermine the common pricing system. The Community desired to isolate the agricultural sector from the inconvenience of currency adjustment and reintroduced an intra-trade levy to stabilize national agricultural prices. The MCA charge or payment is set by the Council of Ministers, and is not affected by the relative price at which particular goods are traded. MCAs assessed against French poultry exports were $16.00 / mt live weight in 1978 and declined to $1.10 / mt in 1982 just prior to the Newcastle ban.

Table 9 Per Unit Values
French Export Broiler, 1978-1982

	1978	1979	1980	1981	1982
Value (1000s mt)	168,064	247,896	379,643	478,369	403,583
Volume (1000s $)	125,958	174,163	237,881	333,283	344,936
Unit value ($/kg)	1.324	1.423	1.596	1.435	1.170
<Transport> ($/kg)	.096	.094	.079	.087	.101
<Processing> ($/kg)	.290	.310	.330	.320	.290
Returns to producer ($/kg)	.938	1.019	1.187	1.028	.779
<Producer costs> ($/kg)	.760	.898	1.022	.91	.814
Producer profit ($/kg)	.178	.121	.165	.108	<.035>

Source: USDA, Foreign Agricultural Service (APPENDIX F)

residual supplies in alternative markets thus having a depressing effect upon prices.

French Domestic Agricultural Assistance

The agricultural orientation law of July 4, 1980 sets forth French policy objectives--increasing agricultural production and exports, stabilizing employment in agriculture, bringing farm incomes in line with those of other sectors of the French economy, and promoting the family farm. Financial aid is the principal instrument used to further these objectives. Table 10 summarizes the form of subsidized loans and direct payments to poultry producers.

Two agencies provide direction and assistance to French agriculture--the Fonds d'Orientation et de Regularization des Marches Agricoles (FORMA), and Credit Agricole. FORMA is a regulatory fund under joint direction of the Ministries of Agriculture and Economy and is responsible for all state intervention in agricultural production and/or markets. FORMA's role was broadened in 1967 to administer EC market regulations for poultry and other commodities.

Subsidized credit is provided through nationally allocated funds to Credit Agricole, a government body with financial autonomy under the Ministries of Agriculture and

Table 10 FRANCE: Summary of Government Loans That Benefit Agriculture, 1981-1982

Item	Interest rate	1981 Budgeted	1981 Actual	1982 Budgeted
	(percent)		-1000 FF-	
Land purchases	9.00	1,900	1,900	1,900
Assistance to young farmers		2,580	2,930	3,450
Mountain	4.75			
Other	6.00			
Modernization of farms		2,100	2,350	2,900
Hogs	7.00			
Other	8.00			
Farm structure	9.00	425	425	510
General loans	11.00	3,700	3,750	4,230
Farm housing	n.a.	440	440	325
Assistance to provinces	n.a.	3,100	3,100	3,500
Total loans	--	15,295	15,295	17,865
$ US, million	--	2,817	2,936	2,924

Source: USDA, Economic Research Service.

Economy. Credit Agricole also issues stock and tax exempt bonds to raise funds. These funds are distributed to regional branches for lending. Interest rates for lending are fixed by the government. Differences between the real costs of raising funds and the lending rate are repaid from the national budget. Forty five percent of the $2.9 billion in transfers and subsidies to agriculture and rural land management from 1980 - 1982 went to Credit Agricole. The livestock sector was awarded $228 million for credit assistance in 1981 and $426.2 million in 1982.

As a lender, Credit Agricole is a mutual organization and serves only members. Membership is limited to farm operations and cooperatives. Farmers obtain 70 per cent of their borrowed funds from Credit Agricole, as interest rates are relatively favorable and the volume of funds is sufficiently large to meet most demands of the agricultural sector. In the late 1970s, for example, when the prime rate climbed above 11 percent, French agricultural loans remained at 8 percent. The rates on special livestock loans rose from 5 to 6.5 per cent during this period, 5 percentage points below the prime lending rate.

Estimates of government credit subsidies during the 1978-1982 period are derived by comparing government bond

rates plus a two point premium[4] with agricultural interest rates taken from Session Economie ITAVI (Table 11). Housing costs (ITAVI statistics) represent the "turn key" purchase price per square meter of dynamic ventilation housing and new equipment. Up to two thirds of the purchase price for housing and equipment may be financed at the government subsidized rate. Annual cost is calculated from the capital recovery factor for a 20 year life. Private cost is the sum of that portion financed at government rates and the balance of housing cost financed at the market rate. The subsidy amount is the difference between social and private costs.

Direct payments are awarded through FORMA to compensate farmers for losses to agricultural income, and amounted to $1 billion in 1980. Producers of milk, poultry, oilseeds and other agricultural products received $550 million of this amount. $35 million was granted for compensation in 1981, of which $5.1 million went to the poultry sector. Also in 1981, FORMA granted $1.87 million for livestock market adjustment and guidance, of which $705,000 went to the poultry sector. In 1982, pork and poultry producers received $28 million in direct aid for farm structural improvements.

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4. An estimate of the premium charged by banks for transactions costs and risk.

Table 11 Social and Private Financial Costs for Broiler Housing, FRANCE, 1978-1982

	1978	1979	1980	1981	1982
			(percent)		
Interest rates					
Market rate	.1100	.1100	.1500	.1800	.1800
subsidized rate	.1000	.1100	.1200	.1300	.1300
			(FF/square meter)		
Housing cost	250	275	330	360	375
Amount financed	165	181.50	217.80	237.60	247.50
			(percent)		
Capital recovery factor					
Market rate	.1256	.1256	.1598	.1868	.1868
Producer rate	.1175	.1256	.1339	.1424	.1424
			(FF/1000 sq meters)		
Social cost	31.400	34.540	52.734	67.248	70.050
Private cost	30.064	34.540	44.187	56.698	59.061
Subsidy	1.336	0.0	8.547	10.550	10.989
			(kg/1000 sq meters)		
Broiler throughput	171,573	188,939	190,270	197,724	175,560
Subsidy					
FF/kg	.008	0.0	.045	.053	.063
$/kg	.002	0.0	.011	.010	.010
1980 $/kg	.003	0.0	.011	.009	.009

Sources: Session Economie, I.T.A.V.I. Compounding and Discounting Fables for Project Evaluation, Economic Development Institute

GDP deflator from International Monetary Fund, Yearbook, 1983

The food processing industry has also received support from the French government. The National Budget set aside $87 million in 1980 to aid the food processing industry. Of this amount, $40 million was used to form the Institute of Food Processing Industries (IDIA). Toward the end of 1981 a suborganization of IDIA, the Financial Association for Innovation in Food Processing, was created for research and development. An additional $74 million was used in 1982 for assistance in restructuring the food processing industry.

The poultry industry benefits from the IDIA programs. A large processing plant established specifically to prepare products for export received capital grants of 35 percent of the initial investment, a 25 percent discount on the land purchase, long term capital loans at 3-5 percent below the minimum interest rate, training grants of 100 percent for new employees wages during the training period and 30 percent from the end of the training period until the new employee has worked six months, and a waiver of taxes for the first 5 years. (USDA,FAS, 1982) APPENDIX G lists derived per kilogram live weight estimates of capital and training grants. Subsidies to building and equipment ranged from $.018 to $.020 /kg live weight during the 1978-1982 period. Training grants for labor amounted to 27 per cent of wages paid, and ranged from $.004 to $.005 /kg live weight.

The impact of these assistance programs is offset partially by taxes on the poultry sector. The French government assesses a value added tax (VAT) upon building construction and input purchases. The French VAT is levied under a flat rate system that provides for compensation by tax authorities on all VAT paid at the end of the growing cycle. French producers sell products net of the VAT and lose only the time value of the taxes on inputs over the length of the growing period. Producers are also assessed with a payroll tax, a vocational training tax and an apprenticeship tax (4.25, .5, 1. per cent of wages paid, respectively). A meat tax is also assessed at .14 per cent of the variable import levy for poultry meat.

The net effects of taxes and subsidies upon production costs are presented in Table 12. Social costs are defined as the total costs of production ,net of all subsidies and taxes. Private costs are those costs which are incurred by the producer. Costs are deflated to 1980 dollars using the GDP price delfator. Rebates on VATs are discounted at the annual interest rate to account for the time value of withheld VAT contributions.[5]

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5. Calculations of taxes and subsidies on a per kilogram basis are presented in APPENDIX H.

Table 12 Social and Private Costs
Chicken, Less than 16 Weeks, Live Weight
FRANCE, 1978-1982

	1978	1979	1980	1981	1982
			- $ / KG -		
FIXED COSTS					
Amortization	.056	.051	.052	.040	.054
Interest	.021	.025	.019	.022	.027
Other	.006	.008	.009	.009	.009
VAT bldg & equip	.010	.009	.009	.009	.010
<Capital grant>	.020	.018	.018	.018	.019
<VAT rebate>	.009	.009	.009	.009	.009
<Int. subsidy>	.003	.000	.011	.009	.008
Subtotal fixed returns	.032	.027	.038	.036	.036
Total fixed	.061	.066	.051	.045	.064
VARIABLE COSTS					
Chicks	.209	.208	.181	.176	.168
Feed	.734	.721	.689	.671	.649
Utilities	.024	.032	.036	.059	.041
Veterinarian	.018	.013	.012	.010	.009
Disinfecting	.003	.003	.002	.004	.004
Labor (catching)	.018	.013	.016	.015	.013
Management	.009	.003	.002	.003	.003
VAT chicks	.015	.015	.013	.012	.012
VAT feed	.051	.050	.048	.047	.036
VAT vet service	.003	.002	.002	.002	.002
Vocat. trng tax	.0001	.0001	.0001	.0001	.0001
Payroll tax	.001	.001	.001	.001	.001
Health tax	.003	.003	.003	.002	.001
VAT rebates:					
<Chicks>	.014	.014	.012	.011	.011
<Feed>	.050	.049	.047	.046	.035
<Vet service>	.003	.002	.002	.002	.002
<Training grant>	.005	.004	.005	.004	.004
Net policy costs	.001	.002	.001	.001	.000
Total variable	1.016	1.022	.939	.939	.887
SOCIAL COSTS	1.108	1.086	1.028	1.018	.987
PRIVATE COSTS	1.076	1.059	.990	.984	.951
POLICY EFFECT	.032	.027	.038	.034	.036

Sources: Session Nationale Economie, I.T.A.V.I.
Eurostat, Agricultural Price Statistics, 1971-1982

Contributions from the French government include grants for buildings, equipment and labor, a subsidized interest rate, and rebates on VATs. Total grants ranged from 1.5¢ -2.3¢ / kg live weight during the five year period. The interest subsidy saved producers from .3¢ to 1.1¢ / kg live weight in production costs. VATs costs producers from .1¢ to .2¢ / kg live weight in opportunity costs. Vocational and apprenticeship taxes, payroll taxes and health taxes ranged from .2¢ - .4¢ / kg live weight for the five years. The net effects of French government policy upon poultry production was a subsidy of 2.7¢ - 3.8¢ / kg live weight.

An Overview of the British Poultry Industry

The UK's accession to the European Community in the early 1970s encouraged substantial change in the British grain-livestock sector. By 1982, responses to high grain prices made the UK an exporter of feed grains. Wheat production rose from 4488 mt in 1975 to 10,260 mt in 1982, an increase of 128.6 percent. Wheat imports for 1982 were 1470 mt, less than half the 1975 level of 3980 mt. Wheat exports increased 702 percent (274 to 2200 thousand met). Corn imports also declined steadily from 3310 to 2000 mt over the 8 year period. Barley exports increased 204 percent, from 847 to 2580 thousand mt.

The UK relied historically on imports of poultry to meet domestic requirements. An average of 8,200 mt or .148 kg per capita of poultry was imported between the years 1967-74. However, since the UKs accession to the EC and its adoption of the feed grain and poultry policies of the CAP, the British poultry industry became an occasional net exporter. Whereas poultry exports were insignificant until 1973, and remained under 10,000 mt until 1977, during the years 1978-1980, the UK became a net exporter. The UK averaged 22,560 mt in poultry exports per year over the 1978-82 period. This recent trend indicates the impact of the adjustment to threshold prices and export subsidy levels that promoted Community feed grain use.

UK imports of poultry meat have averaged 10 thousand mt per year. Before 1971, Denmark was responsible for virtually all of British poultry imports. Ireland, the Netherlands and the United States were also trading partners during this time, but all three held less than a 15 percent market share of British trade. After 1974, the market share of the Netherlands increased, and by 1981 it held nearly 60 percent of the $40 million British poultry trade. In the years 1978 and 1982 British imports reached their highest level to date (22 and 23 thousand mt, respectively).

French poultry sales to the UK were less than $1 million until 1978. However, the following year, sales

to England doubled and by 1980, French-British poultry trade was over $12.5 million. These figures testify to the success of the Newcastle restriction imposed in 1981. French exports declined 140 per cent in value (from $12.5 to 5 million) and 206 per cent in volume (from 4.6 to 1.5 thousand mt) in 1981. Declines were greater in 1982, as only 734 thousand mt was purchased by the UK. France's share of the UK market plummeted from 22.6 to 3.7 per cent during the 1980 - 1982 years. The lion's share of the British market went to the Netherlands in 1981 (58 per cent) and to Denmark in 1982 (76 per cent).

The UK industry is highly integrated. Eleven major producer/processors produce over 90 percent of the frozen broilers. Broilers are homogeneous with respect to size, weight and quality. UK price differences reflect only transport costs from the three principal production areas; Liverpool, the Midlands and East Anglia. Sales from these firms are generally made directly to supermarket organizations. The wholesale trade is largely excluded from the broiler marketing chain as frozen broilers exit the producer/processors' plant in final form. The selling price is largely determined by supply/demand conditions when the birds are marketed. A relatively small volume is sold by forward contracts.

Retail and wholesale prices have remained stable throughout the 1970s and early 1980s. Gross margins for retailers have averaged 17 percent since 1975, just slightly lower than the 20 percent average for most grocery items. Gross margins for wholesalers have remained stable at 9 percent. The stable markup policy of retailer and wholesalers suggest that profitability in this sector is also steady, with the profit effects of supply/demand fluctuations are absorbed largely by the producer/processor. Producers accrue profits during excess demand periods and incur losses during surplus periods (Richardson, 1976).

Costs and Returns to British Production

Estimates of annual costs of production 1978-1982 are presented in Table 13. Costs are deflated and converted from national currency on a per bird basis (as published by the National Farmers' Union, see APPENDIX J) to US dollars per kg for comparison with French costs. Since British production is largely on a consignment basis, fixed costs are not published and must be indirectly estimated to allow comparison with French production costs. Variable costs figures are quarterly averages from the National Farmers Union statistics.

Table 13 Real Costs of Production
Chicken, Less Than 16 weeks
UNITED KINGDOM, 1978-1982

	1978	1979	1980	1981	1982
			- 1980 $ / KG -		
FIXED COSTS					
Amortization	.069	.069	.066	.067	.069
Interest	.050	.052	.051	.053	.052
Other	.006	.003	.004	.004	.004
Total fixed	.125	.125	.121	.124	.125
VARIABLE COSTS					
Chicks	.192	.189	.173	.165	.159
Feed	.916	.874	.780	.743	.718
Utilities	.030	.020	.018	.029	.031
Veterinarian	.004	.004	.004	.005	.003
Disinfecting	.002	.002	.001	.003	.002
Labor	.010	.010	.011	.010	.010
Management	.026	.024	.022	.022	.023
Total variable	1.180	1.123	1.009	.977	.945
Total costs	1.305	1.248	1.130	1.101	1.070

Exchange rate: UK = $2.326 (1980)

Source: National Farmer's Union

Costs are adjusted by the GDP deflator, taken from the International Monetary Fund, IMF Yearbook, 1983.

Calculation of annual amortization and interest costs are presented in APPENDIX K. A 10 year building life and a 70 per cent rate of finance are used to permit comparison with French amortization and interest costs. Fixed costs remained relatively stable throughout the period despite a 4 per cent increase in interest costs. Housing costs remained relatively unchanged. Increases in interest costs were offset by declining costs for insurance and other fixed costs.

Feed and chick costs comprise 91 per cent of variable costs and 83 per cent of total costs. These costs decreased 26 per cent (from $1.108 to .877 / kg live weight) and reduced production costs by 21 per cent. Management costs also declined during the period. All other variable costs remained relatively the same.

UK producers experienced an increasingly competitive environment, as producer returns decreased at a greater rate than costs. Average annual farmgate prices decreased 30 per cent from $1.354 to 1.045 / kg live weight. The ratio of average returns to costs declined by 2.5 per cent from 1.22 to 1.19.

British private and social costs of production are presented in Table 14. No government transfers or financial assistance is provided to the British industry. Published costs exclude VATs. Except for a 7 per cent VAT on building

Table 14 Social and Private Costs
Chicken, Less Than 16 Weeks, Live Weight
UNITED KINGDOM, 1978-1982

	1978	1979	1980	1981	1982
			- $ / KG -		
FIXED COSTS					
Amortization	.069	.069	.066	.067	.069
VAT building and equipment	.001	.002	.002	.002	.002
Interest	.050	.052	.051	.053	.052
Other	.006	.004	.004	.004	.004
Total fixed	.126	.127	.123	.126	.127
VARIABLE COSTS					
Chicks	.192	.189	.173	.165	.159
Feed	.916	.874	.780	.743	.718
Utilities	.030	.020	.018	.028	.030
Veterinarian	.004	.004	.004	.005	.003
Disinfecting	.002	.002	.001	.003	.002
Labor	.010	.010	.011	.010	.010
Management	.026	.024	.022	.022	.023
Total variable	1.180	1.123	1.009	.976	.945
SOCIAL COSTS	1.305	1.248	1.130	1.101	1.070
PRIVATE COSTS	1.306	1.250	1.132	1.103	1.072
POLICY EFFECT	<0.001>	<0.002>	<0.002>	<0.002>	<0.002>

Source: National Farmers' Union
Eurostat, Statistical Publications Office of the European Community.

and equipment purchases, these costs will be identical to those of Table 13. Because of the VAT, British private production costs exceed social costs.

Conclusion

Government policies were a significant influence on the poultry industries of France and the UK during the 1970s and early 1980s. CAP feedgrain policies increased production costs and promoted a more concentrated industry. The impact of CAP policies are clear when the poultry industries of France and the UK are compared. The British Government allowed CAP policy to have its full impact upon the poultry industry. No additional economic assistance was provided. As a result, the UK poultry sector now has half the number of farms it held in 1970 but produces 41 per cent more (655-805 thousand mt) output. The industry is highly integrated and concentrated among eleven firms.

The French Government provided significant economic asistance to its poultry industry in the form of subsidized production credit and direct payments. Production credit is subsidized for all of French agriculture reduced broiler production costs by as much as 3.8¢ / kg live weight. Direct payments were also made to poultry producers as a part of an overall policy to promote agriculture. In

government assistance, and took full advantage of the export reimbursements provided by the CAP. The result of these programs, is a dualistic industry which maintains one foot on the leading edge of technology and innovation yet keeps the other firmly planted in the "farm chicken era". Further changes in this relation seem unlikely, given the wide dispersion of social costs among taxpayers and the political popularity of these programs.

CHAPTER 4

COMPARATIVE ADVANTAGE IN FRENCH AND BRITISH POULTRY PRODUCTION

In this chapter, the countervailing duty is compared to nontariff trade barriers in order to demonstrate why the former is a more efficient policy instrument for offsetting production subsidies in competing nations. Private and social profitability are compared among British and French poultry sectors to reveal how domestic subsidies affect the competive balance between the two countries. These results are used to derive a level of protection "appropriate" for British producers.

Theory: Countervailing Duty vs. Nontariff Trade Barriers

The economic arguments for a countervailing duty against subsidized exports are illustrated in Figure 2a. With free trade and no subsidy, the market is in equiblibrium at Point A, where the supply curve (S) intersects the demand curve (D). Equilibrium price and quantity maximizes world gains from trade since the marginal value of an extra unit, represented by the height of the demand curve, equals P_0, the marginal cost of supplying an additional unit.

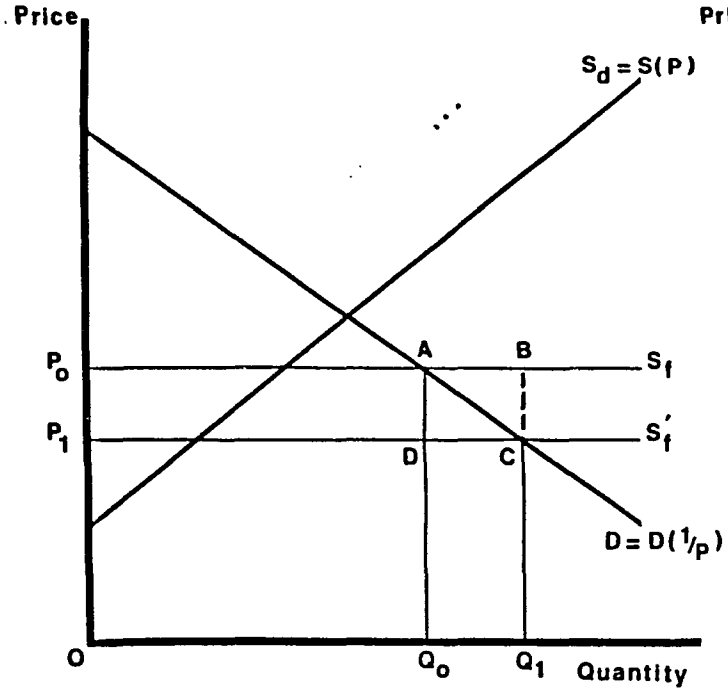

Figure 2a. Export subsidy and countervailing duty

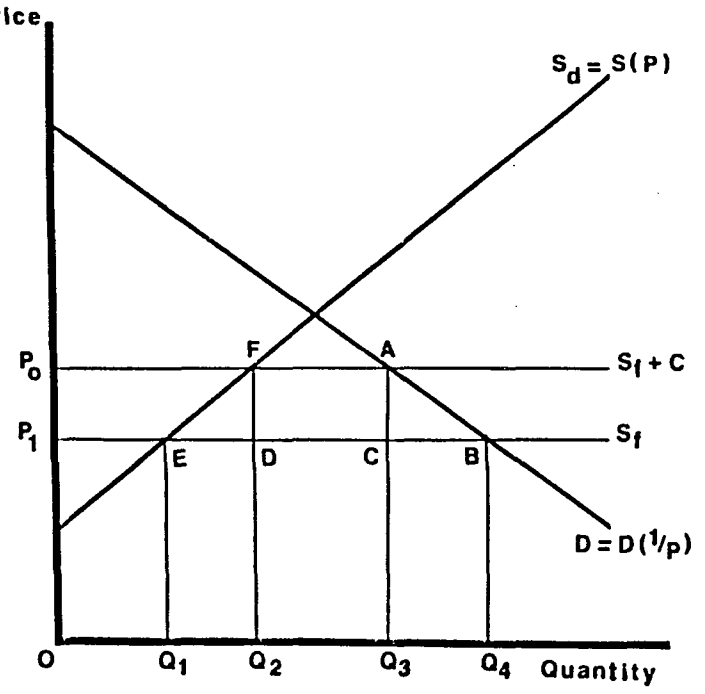

Figure 2b. Cost of nontariff trade barriers

An export subsidy of P_0P_1 lowers the supply curve to S'; the market price falls to P_1 and imports increase to M_0 from Q_1. From a global perspective, this policy is inefficient because excess resources are used in production. The importing country is encouraged to consume Q_1 of the good when price is P_1, yet true costs of production are P_0. Area ACP_0P_1 represents the importing country's net gain, while area CBP_0P_1 represents the total export subsidy bill. Thus, the net world resource loss is represented by the area ABC.

The countervailing duty in this case is an application of the specificity rule --"the use of policy tools closest to the locus of the distortions separating private and social costs is most efficient." (Lindert and Kindleberger, 1982) When excess exports are exactly matched by a countervailing duty equalling the value of the distorting subsidy, trade volume is unaffected. If the importing country applied a countervailing duty just large enough to offset the export subsidy, trade would return to the original price (P_0) and volume (Q_0) as with free trade and no subsidy (Point A). In terms of world efficiency, area ABC, representing wasted resources, is eliminated. Export subsidies thus do nothing for domestic producers in the presence of countervailing duties. However, the exporting country provides a transfer to the importing government

equal to area ADEF. All the economic gains of the subsidy are captured by the importing country government.

Nontariff trade barriers affect the terms and volume of trade in the same manner as a countervailing duty. NTBs cause the price of the import competing good to increase by limiting the volume of imports permitted; by imposing significant costs on foreign producers, exporters or domestic importers; or by imposing conditions of uncertainty on importers that cause limits on the volume of imports. If the importing country applies a barrier to trade that increases the cost of importing from the exporting country to the original level (P_0), imports will return to Q_0. The difficulty however, lies in imposing an NTB that raises costs by an amount exactly equal to the export subsidy. Although an equivalent tariff value can be computed for an NTB ex post, it is difficult to estimate the welfare effects of an NTB ex ante. NTBs are unlikely to be an efficient policy tool to offset distortions.

A diagram of the import-directed trade distortion is provided in Figure 2b. Foreign supply is assumed perfectly elastic at price P_1. At P_1, imports are Q_1Q4 and domestic output is $0Q_1$. To reduce the competition from imports without imposing a tariff, the country can impose a nontariff barrier with an equivalent price effect of P_0P_1. Import volume is reduced to Q_2Q_3, and the supply curve

becomes S_{f+C}, reflecting the additional cost incurred by exporters. The economy suffers real losses in the form of consumption and production effects, areas ABC and DEF, respectively. Total loss of consumer surplus is P_0ABP_1. Of this total, P_0FEP_1 is gained by domestic producers because of price increases.

If the NTB is applied as a quota, the area ACFD represents profit to importers or foreign exporters. If a cost-increasing NTB is applied only to imports, the area ACDF is also a dead weight loss to society. Not only are excess resources (foreign and domestic) moved into production but no tariff revenues are generated.

Another effect of NTBs is simply to shift the pattern of trade, and these redirections must be considered before estimation of the quantitative impact and welfare effects of the NTB. Figures 3a, b, and c illustrate how trade was redirected during the Newcastle ban by comparing trade directions and magnitudes during the year of the ban (1982) with those of the previous year and the period 1975-1980. Although Britain continued to receive over 90 per cent of its poultry imports from EC member states, only Denmark and Ireland were able to comply with the trade restrictions. Historically, Danish exporters traded with Germany and to a lesser extent the UK. Denmark's exports to Germany averaged 16,700 mt ($27.8 million) from 1975-1980, were 13,200 mt in

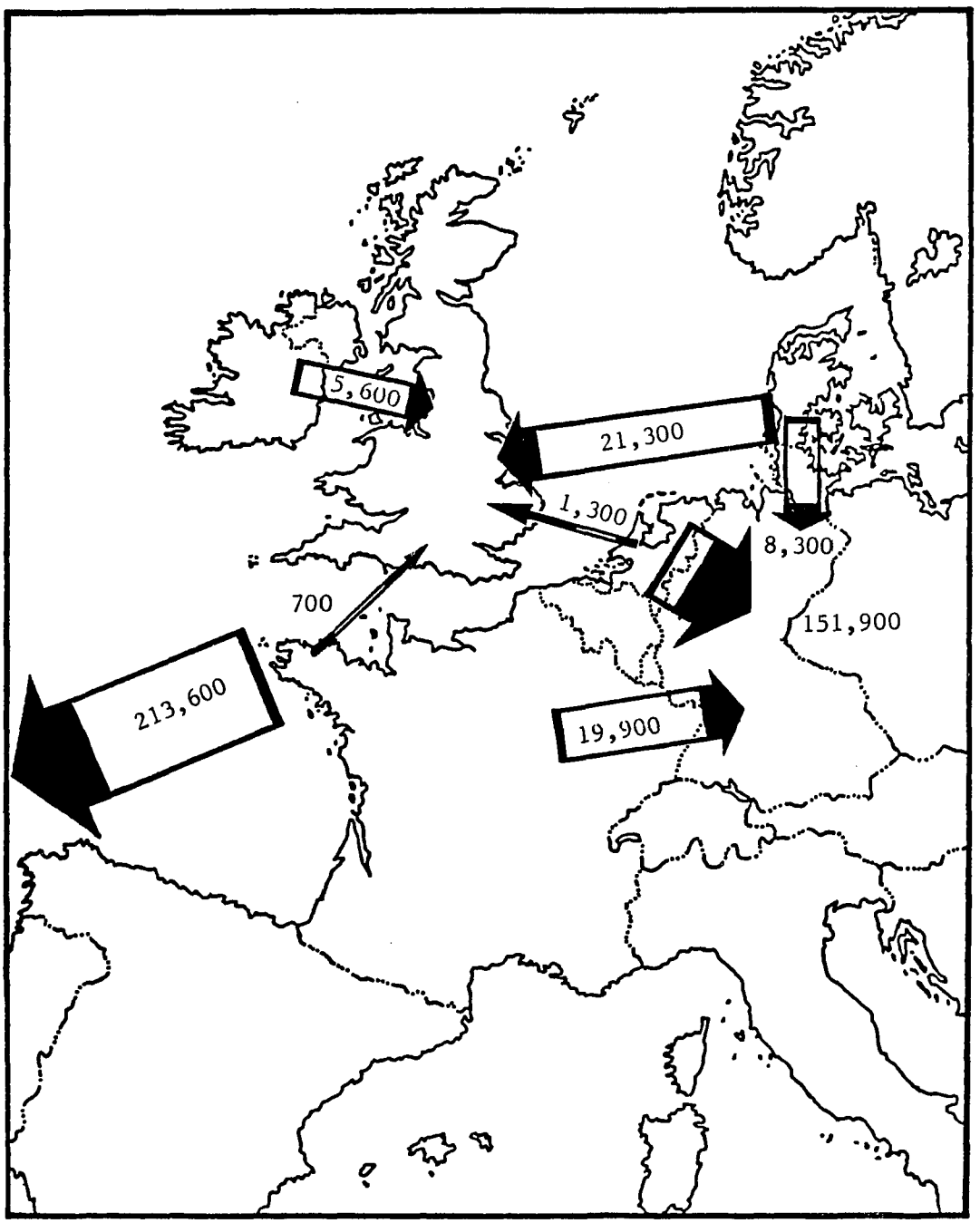

Figure 3a. Poultry trade flows and magnitudes, UK trading partners, 1982.

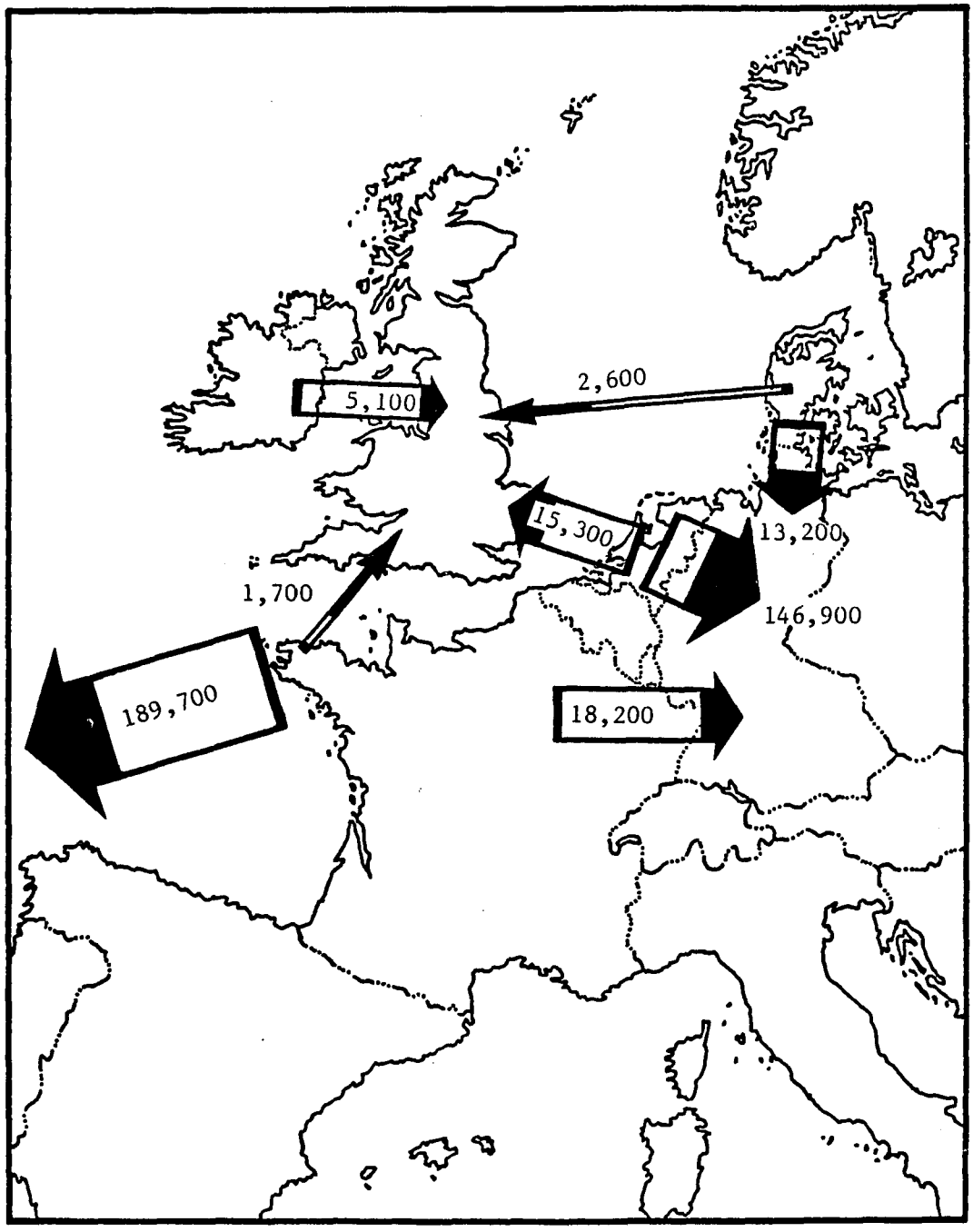

Figure 3b. Poultry trade flows and magnitudes, UK trading partners, 1981.

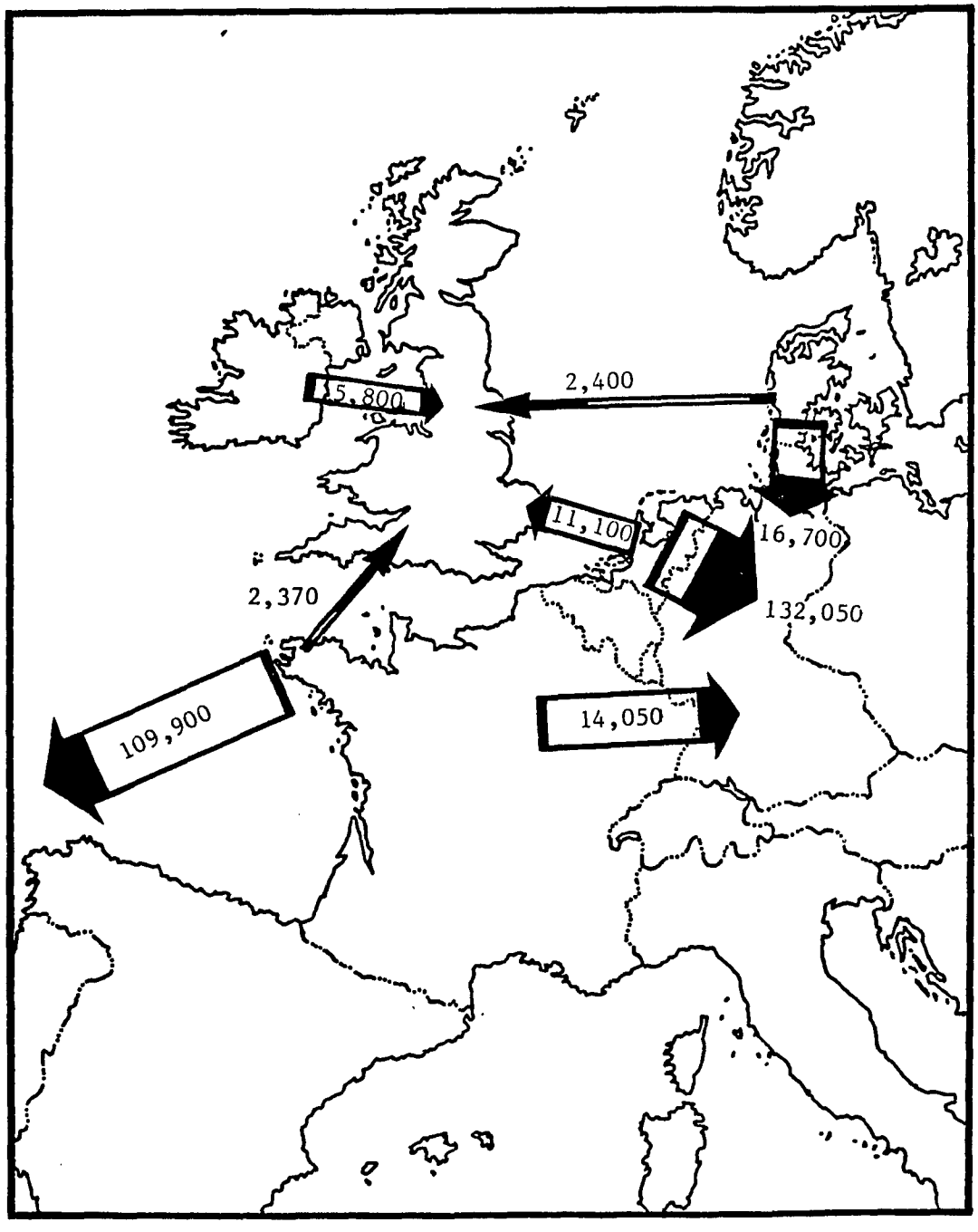

Figure 3c. Poultry trade flows and magnitudes, UK trading partners, 1975-1980.

1981 and dwindled to 8300 mt in 1982. During the year of the trade ban however, Danish exports to the UK jumped to 21,300 mt in 1982 from a 1975-1980 average of 2440 mt (772 per cent) . Ireland's exports to the UK increased 13 per cent to 6600 mt from its pre-ban average of 5800 mt.

Dutch exports to the UK were affected most by the ban. Exports from the Netherlands averaged 11,100 mt from 1975-1980 and increased to 15,300 mt during 1981, but in 1982, only 1,300 mt of Dutch poultry was permitted in the UK. The balance of normal UK-Netherlands trade was absorbed by Germany. The German share of Dutch exports increased 12 points from its 1981 level of 66.4 per cent to 78.4 per cent or an additional 6,000 mt.

French poultry trade was also redirected because of the ban. Although the impact on French trade is not as obvious as the impact on Denmark and the Netherlands, the losses in opportunity costs are nonetheless substantial. France's exports to the UK dropped just 1,670 mt from its 1975-1980 average of 2370 mt to 700 mt in 1982. However, trade volumes in the ban's absence could have been significantly greater than the French historical average. French exports to the UK were increasing steadily prior to the ban. (French exports to the world grew at an unprecedented annual rate of 23 per cent from 1975-1982 from 82.7 to 344.9 thousand mt.) The price difference between French and British "class A

slaughtered chicken" increased annually in France's favor from 13 per cent in 1978 to 31 per cent in 1982 (Eurostat, 1983). Contracts for 70 mt a week of turkey meat, 3000 mt of whole turkeys and 100 million eggs were nullified by the ban (AgraEurope, 1981b). An estimated 2,000 mt of frozen broilers was also denied entry. In total, approximately $22.2 million in French poultrymeat and eggs was banned (assuming a $1400/ mt average price for poultry and $9 million (FF50 million) for eggs).

Besides the loss of trade revenues, the Newcastle disease restriction also penalized foreign producers by imposing additional cost on production. Imports were permitted only from a country that had been free from Newcastle's disease for a period of six months, from flocks which controlled disease infestation with a mandatory slaughter policy; finally, birds could not carry the Newcastle vaccine. Producer's losses were partially offset because they no longer were required to vaccinate. However, they also risked future losses from flock destruction in the event of infestation.

UK Consumer losses can be evaluated as the difference between poultry prices under the ban and what prices would have been in absence of the ban, multiplied by poultry consumption. The ban prevented an estimated 14,480 mt of Dutch and French poultry from British markets. A

calculation of the free trade price is possible given previously derived poultry elasticities for the EC.[1] Total British consumption for 1982 was 851,000 mt. An additional 14,480 mt represents a 1.7 per cent change, and would have caused a 2.78 per cent decline in price, from $1.79 to $1.74 / kg live weight. Wholesale prices would decline from $1.39 to 1.34 /kg. Farmgate prices would fall to $.73 / kg. from $.78.

Financial transfers and efficiency losses are listed in Table 15 and presented graphically in Figure 4. Total British consumer losses from the ban amounted to $4,035,000 (5¢ times 807 thousand mt). Individually however, consumers paid a mere $.69 more than what they would have paid if the ban was not imposed; assuming a 1980 per capita poultry consumption rate of 13.85 kg. The per capita benefits, however, are substantial because of the relatively small number of gainers. Each British producer received an additional $8,877, assuming a 1982 average broiler throughput of 86,190, a 2.06 kg slaughter weight, and the 5¢/ kg price protection. Financial transfers to producers amounted to $4,025,000. Surplus losses were $342,500 and $275,000 for consumers and producers, respectively.

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1. Elasticity of demand = -.61 (APPENDIX L);
   Elasticity of supply = 2.0 (Alston, 1984).

Table 15 Calculated Financial Transfers and Efficiency Losses from the UK Poultry Ban

	Area from Figure 4	Amount
Consumers		
Financial transfer	$P_{0}ACP_{1}$	$-4,035,000
Surplus loss	ACB	- 342,500
Producers		
Financial transfer	$P_{0}FDP_{1}$	4,025,000
Surplus loss	FDE	- 275,000
Government		
Financial transfer	FACD	10,000

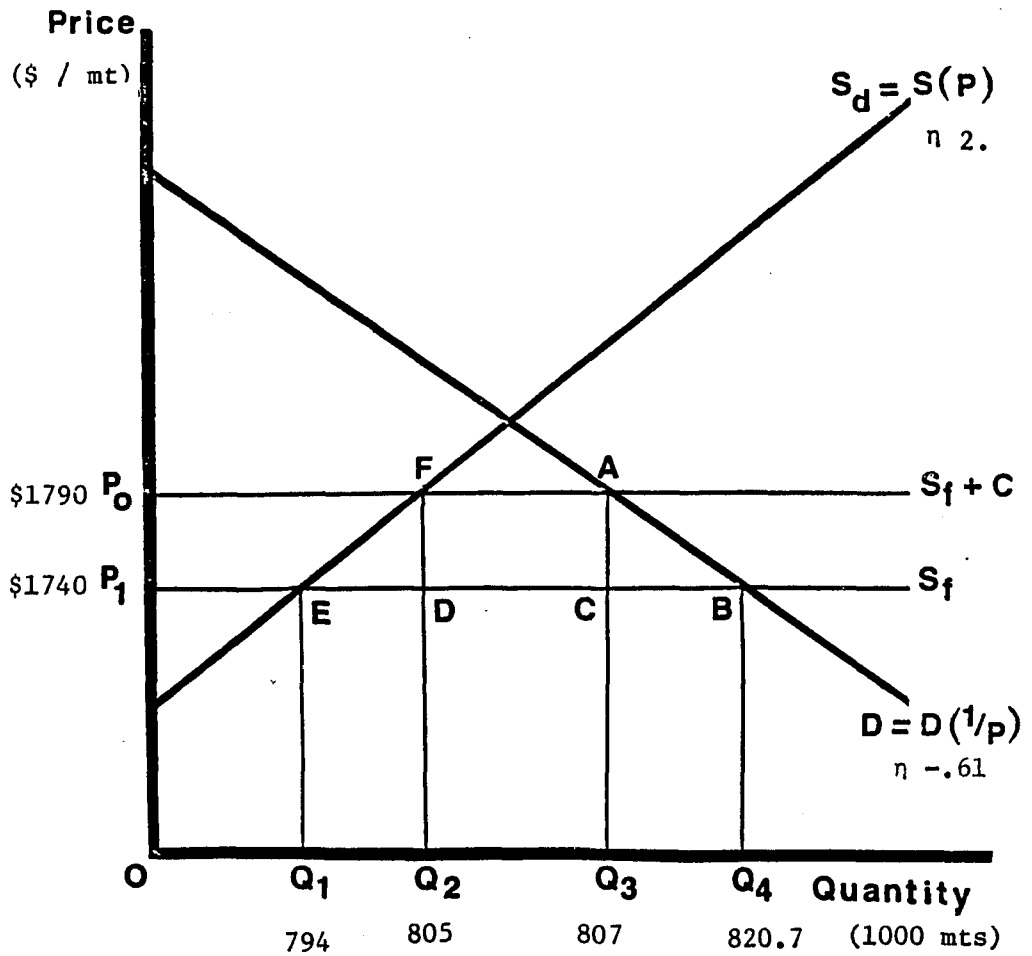

Figure 4. Financial transfers and efficiency losses of the UK poultry ban

Comparison of Policy Effects:

The Impact of Subsidies and Taxes Upon Poultry Prices

Social and private production costs for each nation are compared in Table 16. Price differences that result from economic efficiencies and relative levels of government taxation are revealed by comparing the social costs of each industry. French producers have a significant social cost advantage throughout the 5 year period. French social costs are less by a range of $83-196 / mt live weight.

The level of government assistance is equal to the difference between private and social costs. British private costs exceed social costs by $2 per mt live weight. No governmental economic assistance is provided to the UK poultry industry and a VAT is assessed against purchases of buildings and equipment. French economic assistance ranged from $27-37 / mt live weight. As a result French private costs range from $119 to 229 per mt less than British costs throughout the five years. The major portion of the difference is explained by differences in efficiency rather than differences in government subsidies.

Taxes and Subsidies on Domestic Factors and Intermediate Inputs

French producers received a subsidy amounting to a 5 per cent rate of assistance on the purchase of new buildings

Table 16 British and French Social and Private Costs of Production, Chicken, Less Than 16 Weeks, Live Weight, 1978-1982

	1978	1979	1980	1981	1982
			$ / kg live weight		
UNITED KINGDOM					
Social Costs					
Fixed	.125	.125	.121	.124	.125
Variable	1.180	1.123	1.029	.976	.945
Total	1.305	1.248	1.130	1.101	1.070
Private Costs					
Fixed	.126	.127	.123	.126	.127
Variable	1.180	1.123	1.009	.976	.945
Total	1.306	1.250	1.132	1.103	1.072
Policy Effect	<.001>	<.002>	<.002>	<.002>	<.002>
FRANCE					
Social costs					
Fixed	.093	.093	.089	.080	.100
Variable	1.016	1.022	.939	.939	.887
Total	1.108	1.086	1.028	1.018	.987
Private costs					
Fixed	.061	.066	.051	.045	.064
Variable	1.016	1.022	.939	.939	.887
Total	1.078	1.059	.990	.984	.951
Policy Effect	.032	.027	.038	.034	.036
Cost Differences:					
Social (British - French)	.196	.135	.102	.083	.083
Private (British - French)	.229	.191	.142	.119	.121

Sources: Tables 12 and 14

and equipment, an equivalent of 2¢/kg live weight. French producers were also assessed a VAT of 7 per cent on capital purchases. However, the full amount was refunded by tax authorities. French growers incurred only the opportunity costs of the tax for the time it was held by the government.

French poultrymen also received a direct subsidy amounting to 27 per cent of total wages paid, to defray the expense of training new workers. Production costs were reduced .5¢/kg live weight by the grant. But part of this saving was offset by payroll taxes, a tax on vocational training and apprenticeships, and a tax on meat inspection. These taxes added from .2 - .4¢/kg live weight to production costs. VATs on the purchases of chicks, feed and veterinarian services are also assessed against French poultrymen. These taxes, like the building purchases, were refunded upon application to tax officials.

The net result of all French government programs is a 2-4¢ subsidy of private production costs. Whereas the French trade advantage is somewhat offset at the output level by the VAT, the French producer receives subsidies for domestic factors of production and intermediate inputs. The complicated system of programs which direct French poultry production appear to give with one hand and take with the other. Subsidies are offset by taxes but then partially restored by rebates.

French and British domestic poultry policies differ not so much in terms of subsidization as in their effects upon the incentive for technological innovation. The British are hindered on two fronts from capturing technological efficiencies. UK producers must pay market rates of interest on all borrowed funds, and they are assessed with a 15 per cent VAT on the full purchase price of buildings and equipment. This tax adds .1¢/kg live weight to production costs and discourages British adoption of newer plant and equipment. French subsidies, on the other hand, are designed to encourage adoption of new plants.

Differences in Efficiency

British variable costs exceed those of France for all years 1978-1982. French variable costs were 6 to 13 per cent less than UK costs. On average, British chicks and utility costs were slightly lower than those for France, but UK producers paid more for all other variable cost items. Feed costs were the principal factor in the French production advantage. French producers paid approximately 18 per cent less for feed than their British counterparts.

A comparison of Eurostat (1983) poultry feed prices (complete feed for broiler production) between the two countries lends further support to the view of superior French efficiency. UK feeds cost more and contained

relatively less protein than French feeds throughout 1978-1982. French prices ranged from 5.11 ECUs to 32.14 for a ration containing 18-22 per cent protein, ex mill and packaged. UK feed prices ranged from 22.37 to 35.45 ECUs for 16-22 per cent protein, ex mill and packaged.

The French broiler weighs approximately 60 grams less, uses 10 percent less feed, and requires only 44 feeding days to the UK's 53 (Table 17). Nine fewer days on feed and an average difference of one week less between rotations (14 days for France vs. 21 for the UK) translates into an average of 6.18 rotations per year or 27 percent more than the UK (4.86). Furthermore, more efficient use of poultry housing contributes significantly to French comparative advantage. French broiler statistics report an average stocking density of 22 birds per square meter for years 1978-82, while stocking densities in the UK averaged 18 birds per square meter. Given the above mentioned rotation rates, and an average mortality rate of 4 per cent for both countries, French production is 54 per cent (130 to 84 broilers/m2/year) more efficient per unit of housing area.

Conclusion

The Newcastle poultry restriction limited imports into the UK by disqualifying two of Britain's principal trading partners, the Netherlands and France. Although this action

Table 17 Production Statistics
Chicken, Less Than 16 Weeks, Live Weight
UNITED KINGDOM and FRANCE, 1978-1982

	1978	1979	1980	1981	1982
Slaughter weight (kg)					
France	1.34	1.42	1.43	1.45	1.40
UK	2.006	2.019	2.056	2.062	2.064
Slaughter age (days)					
France	43	44	44	44	43
UK	53	53	53	52	51
Rotations/year					
France	6	6.3	6.3	6.2	6
UK	4.74	4.86	4.86	4.93	5.06
Stocking density (birds/ m^2)					
France	22	22	22	22	22
UK	18	18	18	18	18
Mortality rate (%)					
France	3	4	4	3.8	5
UK	4	5	5	5	5
Throughput (broilers/m^2/yr)					
France	128.040	133.056	133.056	131.216	125.400
UK	81.651	82.931	82.931	83.771	86.190
Feed use/m^2/yr					
France	46.837	39.975	40.058	42.695	49.684
UK	104.828	97.595	100.885	100.875	93.865
Exchange rates					
(FF=ECU)	.174	.172	.170	.166	.155
(FF=$)	.204	.222	.235	.184	.152
(POUND=ECU)	1.501	1.547	1.671	1.808	1.784
(POUND=$)	1.919	2.119	2.326	2.008	1.748

Sources: Session National Economie I.T.A.V.I.
National Farmers' Union.
Eurostat, Agricultural Product Prices, 1971-1982.

forced a redirection of trade among EC members, it did not increase poultry prices within the UK. However, it is reasonable to presume that British prices would have been lower in the absence of the ban. An estimated 14,800 mt of French and Dutch poultrymeat was restricted from British markets. Thus the ban helped to maintain domestic price levels and was perhaps an anticipatory measure by the British government to shield the UK poultry sector from an expected influx of French poultry.

Exporters from Ireland and Denmark as well as the British poultry sector benefited from the ban. Irish and Dutch trade volumes increased 13 and 772 per cent, respectively, relative to their previous averages. UK poultry producers received an estimated 5¢ / kg live weight more than they would have realized under free trade.

British producers gained at the expense of British consumers and taxpayers, and French and Danish exporters. The losses incurred by exporters, however were offset somewhat since trade banned from the UK was absorbed by other markets. British taxpayers and consumers, on the other hand, incurred direct losses from the ban. No figures are published, but taxpayers incurred the cost of administering and enforcing the ban's restrictions. Consumers paid an additional 5¢ / kg for poultry during 1982.

Contrary to the complaints of the British National Farmers Union, French government assistance is not the principal difference in costs between the two nations. When social costs of the two are compared, the relative advantage of French production is clear.

The appropriate protection for British producers can be derived from the estimates of private and social costs. Should policy makers decide to impose a duty that would exactly offset the level of subsidy provided to French producers, a countervailing duty of 3¢/kg live weight or 4.2¢/kg dressed weight (for 70% broilers) would suffice. However, this level of protection would not have offered UK producers any significant level of protection. If policy makers decided to "protect" the British poultry industry, the import duty would have to exceed the difference between British and French private costs (plus transport and the MCA), or approximately 8¢/kg dressed weight.

CHAPTER 5

RESULTS AND CONCLUSIONS

The poultry import ban imposed by the British government in August of 1981 brought a period of temporary economic relief to that nation's poultrymen. Although this action on the part of the UK government risked economic sanction from the European Court, it appears that the British were briefly able to impose this beggar-thy-neighbor policy without bringing retaliation responses.

Although the ban eliminated poultry imports from all but three countries, it was directed primarily at the French poultry exporters, who were thought to receive substantial government subsidies. British accusations of the existence of French government subsidies are true. However, French government subsidies to its poultry industry are a relatively insignificant portion of the difference between French and British costs of production. The UK's accession into the EC and concurrent adoption of the feed grains policies of the CAP, and the British failure to adopt new technology as quickly as its competitors are the principal reasons for the low net returns and relatively high input prices that British poultrymen now experience.

The French poultry sector remains dualistic, with an economically efficient export broiler industry and a domestic sector that has not significantly changed since France joined the EC. The French export industry is comprised of three firms which took advantage of the CAP's export reimbursement policies to garner a significant portion of the world frozen broiler market. Production efficiencies for this sector rival any in the world. French government assistance consists largely of subsidized credit and grants for training new workers. Private production costs were reduced by as much as 3¢/kg live weight by these programs. The advantage of low production costs, combined with aggressive marketing techniques and the CAP export rebate, have made France a world leader in broiler exports.

On the other hand, ~~In contrast~~, French poultry for domestic consumption remains an activity for small holdings and French government assistance has kept the French poultry industry from experiencing the economic consolidation which occurred in other EC Member States. Production technology is specified by law and holdings are confined to 100 birds to encourage premium prices over other chicken.

Contrasting with France, ~~In contrast~~, the British poultry industry provides an example of the full impact of CAP poultry policies. No government assistance was provided and as a result the British industry had half as many producers in 1982 as in

1970 and produced 41 per cent more broilers. UK poultry production is now highly integrated and concentrated among eleven firms.

Despite increasing concentration, British production costs have remained higher than those of most of its EC competitors. French broilers for example, use 10 per cent less feed, require 9 fewer growing days, and are stocked 22 per cent more densely than those of the UK. These statistics translate into a 54 per cent more efficient rate of production for French broilers. Moreover, changes in French feed technology have reportedly reduced feed conversion rates by 10 per cent and feed prices by as much as 27 per cent, an equivalent cost savings of 10¢/kg live weight. In total, French production costs are as much as 12¢/kg live weight lower than those in the UK.

A countervailing duty of 3¢/kg live weight or 4.2¢/kg dead weight (70% broilers) would have offset the French subsidies. However, this tax would not have been sufficient to remove French comparative advantage, and underscores the importance of the poultry ban for the British poultry industry. British policy makers acted in anticipation of a large volume of French poultry flooding British markets in 1981. Import tariffs were prohibited by the Treaty of Rome, and the British government was not willing to assist the industry to adopt technologies. Instead, the UK employed a

nontariff trade barrier, masked as a health and sanitary regulation, to isolate its market from French competition. The major impacts of the ban involved a redirection of trade among UK trading partners, a consumer welfare loss of $955,680, and producer gains of approximately 5¢ /kg live weight. Among the major poultry traders with the UK, only Ireland and Denmark could comply with the ban restrictions, and these countries were able to capture additional shares of the UK market. France and the Netherlands however, could not comply and were forced to seek other markets.

The British government's action was important in revealing a problem with the Treaty of Rome and subsequent EC legislation. Production subsidies are said to be a violation of the spirit of the Treaty, yet are not explicitly illegal, as are tariffs. However, a subsidy can alter competitive balance as effectively as an import tariff. Since EC legislation provides no recourse against member states who indirectly subsidize production, French agricultural producers stand to gain from production subsidies. EC members who choose to retaliate must either adopt subsidies themselves, or employ an alternative beggar-thy-neighbor policy. The employment of a countervailing duty while subsidies are negotiated through a formal appellate would better serve the goals of the EC customs union in three ways. First, a countervailing duty can be

set at a level that exactly offsets the encroaching subsidy or similar have distortion thus reducing the level of resource misallocation. Secondly, countries which do not subsidize production need not be penalized as they are presently under NTBs. A return to tariff protection would therefore, minimize welfare losses from protectionist policies. Finally, the restoration of "justifiable" tariffs would at least increase a nation's accountability for its protective policies by quantifying protection at specific rates. EC member states and other nations as well have replaced concessions made in tariff negotiations with more subdued trade distortions. A return to tariff protection would restore national responsibility by replacing obscure levels of protection with those that are obvious. Given that nations are presently not enamored of policies oriented toward free trade, limited tariff protection at least provided the most efficient and responsible alternative and in this way provides an intermediate step toward the realization of community free trade objectives.

APPENDIX A:

EC-9 SUPPLY/UTILIZATION OF POULTRY (1000 MT)

YEAR	GROSS INDIGENOUS PRODUCTION	NET EXPORTS OF LIVE ANIMALS	NET PRODUCTION	IMPORTS	EXPORTS	NET EXPORTS	CHANGE IN STOCKS	CONSUMPTION
1960	1,234	-1	1,235	140	95	-45	0	1,280
1961	1,385	-1	1,386	186	120	-66	0	1,452
1962	1,494	-1	1,495	216	135	-81	4	1,572
1963	1,602	-1	1,603	186	155	-31	-7	1,641
1964	1,795	0	1,795	209	174	-35	9	1,821
1965	1,951	1	1,950	239	209	-30	-13	1,993
1966	2,091	1	2,090	226	218	-8	12	2,086
1967	2,179	0	2,179	228	239	11	2	2,166
1968	2,254	1	2,253	240	255	15	-10	2,248
1969	2,427	0	2,427	243	274	31	4	2,392
1970	2,645	1	2,644	270	330	60	6	2,578
1971	2,718	-3	2,721	295	366	71	11	2,639
1972	2,944	-5	2,949	329	393	64	-16	2,901
1973	3,134	-7	3,141	330	409	79	38	3,024
1974	3,142	-10	3,152	328	426	98	-2	3,056
1975	3,162	-5	3,167	340	412	72	-26	3,121
1976	3,303	-7	3,310	327	441	114	21	3,175
1977	3,419	-5	3,424	326	491	165	13	3,246
1978	3,588	-5	3,593	345	469	124	-12	3,481
1979	3,739	3	3,736	356	541	185	4	3,546
1980	3,901	1	3,900	357	614	257	10	3,632

IMPORTS AND EXPORTS INCLUDE INTRA-EC TRADE.
SOURCES:
(1960-1976) - EUROSTAT, MONTHLY STATISTICS OF MEAT, 1978.
(1977-1980) - EUROSTAT, ANIMAL PRODUCTION, 1982.

APPENDIX B: Conversion Factors for the Calculation of Sluicegate Prices for Eggs and Poultry

Egg Products

Product	Conversion Factor	Standard Amount
Dried Whole Egg	4.52	73.75
Frozen Whole Egg	1.16	21.76
Liquid Egg Yolk	2.04	43.52
Frozen Egg Yolk	2.18	45.94
Dried Egg Yolk	4.68	84.63
Dried Albumen	4.06	111.22
Frozen Albumen	0.55	14.51

Poultry

Product	Feed Conversion Ratio (FCR)	Standard Amount
83% chicken	1.684	73.37
70% chicken	1.915	83.42
65% chicken	2.087	90.89
85% ducks	2.647	80.42
70% ducks	3.214	97.66
63% ducks	3.571	108.51
82% geese	3.049	127.80
75% geese	3.333	115.55
80% turkeys	2.275	118.75
73% turkeys	2.493	130.13
Guinea-fowl	3.410	137.29
Live day-old chicks:		
of Turkeys and Geese	0.830	72.54
of other poultry	0.392	17.51

Source: Official Journal of the European Community

APPENDIX C:
EC Feed Use, 1964-65 Average
and 1978-79 Average

1,000 mt

	1964-65	1978-79	% change
Corn	15,732	21,290	35
Wheat	8,535	11,837	39
Barley	18,617	26,996	45
Other grains	15,483	9,026	-42
Oilseed meal	8,181	19,271	135
Corn gluten	371	2,451	560
Cassava	797	4,500	664
Potatoes	14,800	6,250	-58

Source: USDA, Economic Research Service

APPENDIX D:
EC Expenditures on Poultry Meat Subsidies, 1967-1981

	Eurpoean Units of Account	Dollars
1967	3,355,000	$ 3,355,000[1]
1968	4,685,662	4,685,662
1969	4,981,054,	4,981,051
1970	8,211,00	8,211,000
1971	10,820,000[2]	11,341,719
1972	10,477,261	11,758,991
1973	17,764,037	21,903,868
1974	12,334,860	14,719,403
1975	4,108,198	5,103,352
1976	7,752,746	8,671,975
1977	17,441,469	19,910,352
1978	30,546,498	38,962,369
1979	63,483,063	87,082,390
1980	72,000,000[2]	100,278,550[2]
1981	78,400,000[2]	79,968,000[2]

Source: General Budget of the EC

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1. Dollar coversions based on average annual exchange rate provided in the General Budget of the EC

2. Appropriation Figures - exact expenditure data not available

APPENDIX E: Supply, Exports and Consumption
Chicken, Less Than 16 Weeks
FRANCE, 1964-1982

Year	Total Supply	Total Exports	Total Consumption
	- 1000 mts -		
1964	363	17	342
1965	372	17	351
1966	380	16	360
1967	386	11	371
1968	398	12	383
1969	412	14	395
1970	432	26	404
1971	429	28	396
1972	470	35	432
1973	516	39	468
1974	525	52	465
1975	429	75	452
1976	543	80	459
1977	571	101	465
1978	614	126	483
1979	651	171	476
1980	700	220	474
1981	790	319	457
1982	876	324	476

Source: USDA, Foreign Agricultural Service

APPENDIX F:

TABLE 4.1 VALUE OF SELECTED COUNTRIES EXPORTS OF POULTRY FRESH CHLD,FRZN
BY MAJOR TRADE PARTNERS
1975 - 1982
SITC CODE: 0114 (IN THOUSANDS OF DOLLARS)

REPORTING COUNTRY AND PARTNER	1975	1976	1977	1978	1979	1980	1981	1982	GROWTH RATE(%)
FRANCE (INCL INTRA-TRADE)									
SAUDI ARABIA	15,736	26,606	35,079	40,578	46,325	108,104	121,129	110,632	32
EC-10	43,676	41,937	42,395	45,376	63,782	89,081	89,233	81,970	9
YEMEN	0	712	4,738	30,334	37,112	52,016	45,257	45,350	111
USSR	0	0	13,468	2,645	35,325	28,823	50,663	28,962	17
UNITED ARAB EMIR	4,149	8,998	7,950	9,614	9,905	21,046	17,233	18,670	24
SWITZERLAND	12,052	10,711	10,192	12,009	14,811	17,708	16,253	15,729	4
IRAN	2,954	2,333	154	40	0	0	37,257	10,077	19
ROMANIA	0	0	0	0	0	753	11,197	8,846	243
YEMEN DEM AD	0	0	0	0	252	3,413	3,272	8,930	227
IRAQ	10,990	1,166	1	0	0	1,038	616	7,247	-6
REST OF WORLD	16,249	21,457	23,245	27,209	38,382	57,661	86,269	67,210	22
TOTAL	105,846	113,739	137,222	168,064	247,394	379,643	478,348	403,503	21
UNITED KINGDOM (INCL INTRA-TRADE)									
EC-10	657	7,274	11,079	23,736	13,473	16,994	26,432	24,593	68
NIGERIA	269	207	304	3,087	132	83	374	755	16
HONG KONG	369	301	404	406	603	610	567	474	4
JAPAN	29	51	59	249	30	280	273	303	34
UNITED ARAB EMIR	61	223	2,649	1,460	867	1,640	65	240	22
SAUDI ARABIA	17	1,124	275	257	260	305	551	109	30
JORDAN	0	4	5	25	22	83	47	109	73
TOGO	0	0	0	0	0	9	57	86	200
SINGAPORE	139	51	66	74	144	126	45	79	-6
GABON	0	0	0	0	0	28	62	62	45
REST OF WORLD	584	2,273	24,571	15,570	15,243	12,512	1,739	472	-7
TOTAL	2,124	11,508	39,446	44,924	36,845	32,670	30,372	27,290	44
GRAND TOTAL	107,950	125,246	176,668	212,988	284,241	412,313	508,741	430,873	22

NOTE: TOTALS MAY NOT ADD DUE TO ROUNDING.
NOTE: GROWTH RATES REPRESENT AVERAGE ANNUAL GROWTH SINCE 1975
SOURCE: UNITED NATIONS CALENDAR YEAR TRADE DATA

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APPENDIX F -- continued

TABLE 4.2 VOLUME OF SELECTED COUNTRIES EXPORTS OF POULTRY FRESH CHILLED
BY MAJOR TRADE PARTNERS
1975 - 1982

SITC CODE: 0114

REPORTING COUNTRY AND PARTNER	UNIT	1975	1976	1977	1978	1979	1980	1981	1982	GROWTH RATE(%)
FRANCE (INCL INTRA-TRADE)										
SAUDI ARABIA	MT	15,623	24,254	32,056	34,829	41,633	79,841	93,200	110,906	32
EC-10	MT	29,450	24,237	23,041	22,136	24,015	32,560	29,180	30,050	4
YEMEN	MT	0	430	4,254	27,259	33,267	30,267	32,596	43,491	118
USSR	MT	0	0	11,840	3,069	32,044	21,150	43,133	27,344	18
UNITED ARAB EMIR	MT	4,064	8,136	7,323	8,243	8,855	15,272	13,229	13,695	24
SWITZERLAND	MT	5,409	5,334	5,032	5,317	6,131	6,821	6,719	7,440	5
IRAN	MT	3,104	2,275	402	10	0	0	28,244	10,500	19
ROMANIA	MT	0	0	0	0	0	707	8,097	3,349	264
YEMEN DEM RP	MT	0	0	0	0	203	2,534	2,436	6,888	224
IRAQ	MT	10,712	1,313	0	0	0	720	369	6,417	-7
REST OF WORLD	MT	13,998	10,703	13,380	21,115	28,014	40,009	65,910	63,800	24
TOTAL		82,760	84,687	103,429	126,958	174,163	237,881	333,283	344,936	23
UNITED KINGDOM (INCL INTRA-TRADE)										
EC-10	MT	824	5,107	7,136	15,778	9,315	7,667	13,950	17,276	70
NIGERIA	MT	261	177	196	3,035	62	72	305	864	19
HONG KONG	MT	606	419	291	255	394	460	527	579	-1
JAPAN	MT	22	41	37	122	32	120	107	150	32
UNITED ARAB EMIR	MT	54	174	2,560	1,331	655	1,192	29	122	12
SAUDI ARABIA	MT	11	961	169	133	190	44	95	29	12
JORDAN	MT	0	2	3	7	7	18	12	23	50
TOGO	MT	0	0	0	0	0	15	116	163	230
SINGAPORE	MT	104	36	50	49	119	104	72	65	-6
GABON	MT	0	0	0	0	0	41	92	100	56
REST OF WORLD	MT	475	2,238	20,037	13,824	14,696	9,684	1,627	299	-7
TOTAL		1,957	9,135	30,469	31,537	25,421	19,412	16,372	19,657	39
GRAND TOTAL		84,717	93,822	133,898	158,495	199,584	257,293	350,255	364,593	23

NOTE: TOTALS MAY NOT ADD DUE TO ROUNDING.
NOTE: GROWTH RATES REPRESENT AVERAGE ANNUAL GROWTH SINCE 1975
SOURCE: UNITED NATIONS CALENDAR YEAR TRADE DATA

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APPENDIX F -- continued

TABLE A.5 MARKET SHARES OF SELECTED COUNTRIES' EXPORTS OF POULTRY FROM CHILD-EARN
BY MAJOR TRADE PARTNERS
1975 - 1982
(IN PERCENTAGES)

SITC CODE: 0114

REPORTING COUNTRY AND PARTNER	1975	1976	1977	1978	1979	1980	1981	1982	GROWTH RATE(%)
FRANCE (INCL INTRA-TRADE)									
SAUDI ARABIA	14.87	23.38	25.56	24.14	18.69	26.48	25.32	27.41	9
EC-10	41.26	36.87	30.90	27.20	25.72	23.46	18.65	20.91	-10
YEMEN	0	0.45	3.45	19.08	15.78	13.70	9.46	11.05	71
USSR	0	0	9.41	1.69	14.25	7.59	10.59	7.19	-6
UNITED ARAB EMIR	3.82	7.61	5.79	5.72	4.03	5.54	3.60	4.63	2
SWITZERLAND	11.29	9.42	7.43	7.15	5.97	4.66	3.40	3.60	-14
IRAN	2.83	3.05	0.11	0.02	0	0	7.79	2.50	-2
ROMANIA	0	0	0	0	0	0.20	2.34	2.19	232
YEMEN DEM RP	0	0	0	0	0.10	0.90	0.68	2.19	178
IRAQ	10.38	1.04	0.00	0	0	0.27	0.13	1.80	-22
REST OF WORLD	15.35	18.47	16.94	16.19	15.47	15.19	18.03	16.48	1
TOTAL	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	0
UNITED KINGDOM (INCL INTRA-TRADE)									
EC-10	30.79	63.21	28.12	53.97	52.86	52.02	87.23	50.13	17
NIGERIA	12.61	1.90	0.77	6.87	0.36	0.25	1.23	2.77	-19
HONG KONG	17.29	2.62	1.02	0.90	1.65	1.87	1.87	1.74	-29
JAPAN	1.83	0.44	0.15	0.05	0.21	0.86	0.80	1.11	-7
UNITED ARAB EMIR	2.86	1.94	6.72	3.29	2.35	5.02	0.21	0.01	-35
SAUDI ARABIA	0.90	4.77	0.70	0.57	0.72	0.93	1.91	0.40	-9
JORDAN	0	0.03	0.01	0.06	0.06	0.25	0.15	0.40	50
TOGO	0	0	0	0	0	0.03	0.19	0.32	234
SINGAPORE	6.47	0.44	0.22	0.16	0.35	0.39	0.28	0.29	-36
GABON	0	0	0	0	0	0.09	0.20	0.23	63
REST OF WORLD	27.37	19.75	62.29	34.66	41.38	38.30	5.92	1.73	-23
TOTAL	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	0

NOTE: TOTALS MAY NOT ADD DUE TO ROUNDING.
NOTE: GROWTH RATES REPRESENT AVERAGE ANNUAL GROWTH SINCE 1975
SOURCE: DERIVED FROM UNITED NATIONS CALENDAR YEAR TRADE DATA

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APPENDIX F -- continued

TABLE 4.4 UNIT VALUES OF SELECTED COUNTRIES EXPORTS OF POULTRY FRESH CHLD,FRZN
BY MAJOR TRADE PARTNERS
1975 - 1982
SITC CODE: 0114 (IN DOLLARS PER UNIT)

REPORTING COUNTRY AND PARTNER	UNIT	1975	1976	1977	1978	1979	1980	1981	1982	GROWTH RATE(%)
FRANCE (INCL INTRA-TRADE)										
SAUDI ARABIA	MT	1,067.23	1,096.37	1,092.94	1,045.04	1,112.72	1,353.99	1,299.67	979.86	-0
EC-10	MT	1,463.18	1,730.29	1,819.98	2,052.66	2,655.92	2,735.93	2,337.17	2,153.92	6
YEMEN	MT	0	1,190.70	1,113.78	1,114.60	1,175.73	1,359.29	1,368.85	1,043.90	-2
USSR	MT	0	0	1,137.50	927.01	1,102.39	1,362.79	1,174.58	1,059.17	-1
UNITED ARAB EMIR	MT	1,020.92	1,105.70	1,085.62	1,040.14	1,118.55	1,378.08	1,301.48	798.66	-0
SWITZERLAND	MT	2,228.14	2,006.06	2,001.57	2,259.60	2,415.76	2,596.10	2,349.94	2,114.11	-1
IRAN	MT	964.56	1,025.49	382.13	4,000.00	0	0	1,319.11	958.98	-0
ROMANIA	MT	0	0	0	0	0	1,065.06	1,229.75	946.20	-6
YEMEN DEM AR	MT	0	0	0	0	1,241.38	1,346.89	1,359.93	1,291.94	1
IRAQ	MT	1,025.95	903.27	0	0	0	1,441.67	1,669.38	1,125.34	1
REST OF WORLD	MT	1,160.81	1,146.74	1,139.43	1,246.56	1,370.10	1,441.20	1,302.69	1,052.84	-1
UNITED KINGDOM (INCL INTRA-TRADE)										
EC-10	MT	1,549.53	1,424.32	1,559.65	1,962.26	2,070.36	2,216.51	1,899.07	1,423.54	-1
NIGERIA	MT	1,030.65	1,169.49	1,551.02	997.42	2,129.03	1,152.78	1,053.52	871.82	-2
HONG KONG	MT	508.91	718.38	1,196.32	1,273.64	1,543.23	1,311.83	1,075.90	820.07	4
JAPAN	MT	1,772.73	1,243.90	1,567.57	2,040.98	2,500.00	2,333.33	2,551.40	2,020.00	2
UNITED ARAB EMIR	MT	1,139.63	1,446.05	1,034.77	1,096.92	1,323.69	1,367.48	2,241.38	2,022.78	9
SAUDI ARABIA	MT	1,545.45	1,149.61	1,627.22	1,922.33	1,750.00	6,891.82	6,482.35	4,260.00	16
JORDAN	MT	0	2,000.00	1,666.67	3,571.43	3,142.86	4,611.11	3,916.67	4,729.17	15
TOGO	MT	0	0	0	0	0	600.00	491.38	527.61	-6
SINGAPORE	MT	1,326.92	1,416.67	1,720.00	1,710.20	1,252.17	1,211.54	1,180.56	1,215.38	-1
GABON	MT	0	0	0	0	0	682.93	673.91	620.00	-5
REST OF WORLD	MT	1,229.47	1,015.64	1,226.59	1,126.20	1,037.55	1,292.03	1,105.72	1,633.00	4

NOTE: TOTALS MAY NOT ADD DUE TO ROUNDING.
NOTE: GROWTH RATES REPRESENT AVERAGE ANNUAL GROWTH SINCE 1975
SOURCE: DERIVED FROM UNITED NATIONS CALENDAR YEAR TRADE DATA

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APPENDIX G: Annual Costs of Production
Chicken, Less Than 16 Weeks, Live Weight
FRANCE, 1978-1982

	1978	1979	1980	1981	1982
		- FF/ KG -			
FIXED COSTS					
Amortization	.190	.190	.220	.242	.292
Interest	.071	.093	.080	.107	.051
Other	.020	.030	.040	.044	.051
Total fixed	.0281	.313	.340	.393	.489
VARIABLE COSTS					
Chicks	.710	.780	.769	.848	.907
Feed	2.490	2.707	2.934	3.233	3.508
Utilities	.080	.120	.155	.284	.221
Veterinarian	.060	.050	.050	.050	.051
Disinfecting	.010	.010	.010	.020	.020
Labor (catching)	.060	.010	.070	.070	.070
Management	.030	.050	.010	.015	.015
Total variable	3.440	3.727	3.998	4.520	4.792
Total Cost	3.721	4.040	4.338	4.913	5.281
		- $ / KG -			
FIXED COSTS					
Amortization	.039	.042	.052	.045	.044
Interest	.014	.021	.019	.020	.022
Other	.004	.007	.009	.08	.008
Total fixed	.057	.069	.080	.072	.074
VARIABLE COSTS					
Chicks	.0144	.173	.181	.156	.138
Feed	.507	.600	.689	.595	.534
Utilities	.016	.027	.036	.052	.034
Veterinarian	.005	.005	.005	.010	.013
Labor (catching)	.012	.011	.016	.013	.011
Management	.003	.002	.002	.003	.002
Total variable	.703	.829	.942	.838	.739
Total cost	.760	.898	1.022	.910	.814
Exchange (FF=$)	.204	.222	.235	.184	.152

Source: Session nationale I.T.A.V.I.

APPENDIX H:
French Domestic Subsidy Equivalents

	1978	1979	1980	1981	1982
CAPITAL GRANT					
Capital investment			($ / kg)		
	.056	.051	.052	.050	.054
Portion of subsidy					
	.04	-	.16	.156	.156
Subsidy equivalent			($ / kg)		
	.002	-	.008	.0078	.0084
Broiler throughput			(broilers / yr)		
	171573	188939	190270	197724	175560
Annual subsidy equivalent			($ / 1000 m^2)		
	384.32	-	1522.16	1542.25	1478.92
TRAINING GRANT					
Annual wages paid			($ / 1000 m^2)		
	3088.32	2456.21	3424.86	3163.58	2282.28
Annual wages paid			($ / kg)		
	.018	.013	.015	.013	.013
Training period wages			($ / 1000 m^2)		
	370.60	294.74	410.98	379.63	273.87
Six month wages (30% subsidy)			($ / 1000 m^2)		
	463.25	368.43	513.73	474.54	342.34
Total subsidized wages			($ / 1000 m^2)		
	833.85	663.17	924.71	854.17	616.21
% of wages paid	27	27	27	27	27
Subsidy equivalent			($ / kg liveweight)		
	.0049	.0035	.0048	.0043	.0035

APPENDIX I:
French Domestic Taxes

	1978	1979	1980	1981	1982
Broiler throughput	171573	188939	190270	197724	175560
VALUE ADDED TAXES					
Building and Equipment					
Cost/kg	.056	.051	.052	.050	.054
VAT assessment	.176	.176	.176	.176	.186
VAT/kg	.010	.009	.009	.009	.010
VAT rebate	.009	.009	.009	.009	.010
Chicks					
Cost/kg	.209	.208	.181	.176	.168
VAT assessment	.07	.07	.07	.07	.07
VAT/kg	.015	.015	.013	.012	.012
VAT rebate	.014	.014	.012	.011	.011
Feed					
Cost/kg	.507	.600	.689	.595	.534
VAT assessment	.07	.07	.07	.07	.055
VAT/kg	.051	.050	.048	.047	.036
VAT rebate	.0501	.049	.0466	.046	.0351
Veterinarian					
Cost/kg	.018	.013	.012	.010	.009
VAT assessment	.176	.176	.176	.176	.186
VAT/kg	.003	.002	.002	.0018	.0016
VAT rebate	.0029	.0019	.0019	.0016	.0015
TAXES ON WAGES					
Taxes on Vocational Training and Apprenticeships					
Wages paid/kg	.018	.013	.016	.015	.013
Assessment	.015	.015	.015	.015	.015
Assessment/kg	.0003	.0002	.0002	.0002	.0002
Total annual assessment (Assess./kg * annual throughput)	51.47	37.79	38.05	39.54	35.12

APPENDIX I -- continued

	1978	1979	1980	1981	1982
Payroll Tax					
Wages paid/kg	.018	.013	.016	.015	.013
Assessment	.0425	.0425	.0425	.0425	.0425
Assessment/kg	.0008	.0006	.0007	.0007	.0006
Total annual assessment	131.25	103.91	129.38	134.45	96.55

HEALTH TAX

Tax on Meat Inspection: .14% of sluicegate and levy price

sluicegate and levy price ($/kg)	1.7617	1.8311	1.8285	1.3882	1.0487
Assessment/kg	.0024	.0025	.0026	.0019	.0014
Total annual assessment	411.78	472.34	494.70	375.68	257.75

APPENDIX J: Annual Costs of Production
Chicken, Less Than 16 Weeks, Live Weight
UNITED KINGDOM, 1978-1982

	1978	1979	1980	1981	1982
			- pence / bird -		
FIXED COSTS					
Amortizaion	4.451	5.063	5.826	6.602	7.469
Interest	.390	.419	.451	.606	.794
Other	.388	.252	.326	.343	.410
Total fixed	5.229	5.734	6.603	7.751	8.623
VARIABLE COSTS					
Chicks	12.385	13.947	15.288	16.404	17.096
Feed	59.014	64.308	68.913	73.699	77.404
Utilities	1.936	1.463	1.629	2.870	3.290
Veterinarian	.227	.293	.318	.477	.302
Disinfecting	.145	.117	.125	.286	.179
Labor (catching)	.644	.759	.948	1.028	1.119
Management	1.699	1.793	1.958	2.175	2.480
Total variable	76.050	82.680	89.179	96.939	101.870
Total Costs	81.279	88.414	95.782	104.490	110.493
			- $ / KG -		
FIXED COSTS					
Amoritization	.043	.053	.066	.064	.063
Interest	.037	.044	.051	.059	.063
Other	.003	.002	.003	.003	.003
Total fixed	.084	.109	.120	.119	.118
VARIABLE COSTS					
Chicks	.118	.146	.172	.159	.144
Feed	.564	.374	.779	.717	.655
Utilities	.018	.015	.018	.027	.027
Veterinarian	.002	.003	.003	.004	.002
Disinfecting	.001	.001	.001	.002	.001
Labor (catching)	.006	.007	.010	.010	.009
Management	.016	.018	.022	.021	.021
Total variable	.757	.867	1.008	.944	.862
Total cost	.841	.976	1.128	1.063	.980
Exchange (P=$)	1.919	2.119	2.326	2.008	1.748
Slaughter weight	2.006	2.019	2.056	2.062	2.064

Source: National Farmer's Union

APPENDIX K:
Derived Amortization and Interest Costs
UK Poultry Production, 1978-1982

	1978	1979	1980	1981	1982
Interest rates					
Market	.1400	.1500	.1600	.1700	.1500
Housing cost					
UK/m^2	28.28	31.73	35.173	38.96	48.80
70 per cent financing	19.80	22.21	24.62	27.27	34.16
Capital recovery factor (10 years)	.1917	.1993	.2069	.2147	.1993
Amortization per m^2					
UK/m^2	3.790	4.427	5.094	2.855	6.809
Broiler throughput					
kg/yr/m^2	171065	176517	179751	182866	188136
birds/yr/m^2	85277	87428	87428	88684	91151
Amortization					
UK P / kg lw	.02219	.02508	.02834	.03202	.03619
UK P / bird	.04451	.05063	.05826	.06602	.07469
Real UK P/kg	.0297	.02958	.02834	.02861	.02979
Real $ / kg	.069	.069	.066	.067	.069
Interest costs					
UK / kg lw	.0194	.0207	.0219	.0293	.036
UK / bird	.0390	.0419	.0451	.0605	.0744
US $ / kg lw	.037	.044	.051	.059	.063

Exchange rate: UK = $2.326 (1980)

Sources: National Farmers Union
Economic Development Institute, 1973.
International Monetary Fund, Yearbook, 1983

APPENDIX L:
EC Poultry Demand
Equation and Simulation Results

Variable	Coefficient	t-test
Constant	-.33	-.21
ln(GDP)	.33	1.87
inverse(GDP)	-1,292	-2.86
ln(PPPt)	-.61	-6.12
ln(PPPk)	.14	1.16
Bel-Lux	.23	5.44
Denmark	-.39	-9.44
France	.58	13.44
Ireland	.98	7.25
Italy	1.17	14.51
Netherlands	-.22	-5.68
UK	.5	6.3

WHERE: lnGDP - natural log of gross domestic product

lnPPPt - natural log of purchase price of poultry

lnPPPk - natural log of purchase price of pork country names are dummy variables and represent the individual intercepts

n = 160 R^2 = .93 DW = .57 SSR = 2.07 SE = .12

APPENDIX L -- continued

Year	Actual Consumption	Estimated Consumption	Error
	- 1,000 mt -		%
1960	1,280	1,346	.051
1961	1,462	1,488	.025
1962	1,572	1,559	-.008
1963	1,641	1,685	.027
1964	1,821	1,730	-.050
1965	1,993	1,855	-.069
1966	2,086	1,979	-.051
1967	2,166	2,077	-.041
1968	2,248	2,206	-.019
1969	2,392	2,353	-.016
1970	2,578	2,596	.007
1971	2,639	2,720	.031
1972	2,901	2,857	-.015
1973	3,024	2,862	-.053
1974	3,056	3,031	-.008
1975	3,121	3,151	.010
1976	3,175	3,277	.032
1977	3,246	3,400	.047
1978	3,481	3,592	.032
1979	3,549	3,774	.063

Average error = .033

Source: USDA, Economic Research Service

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