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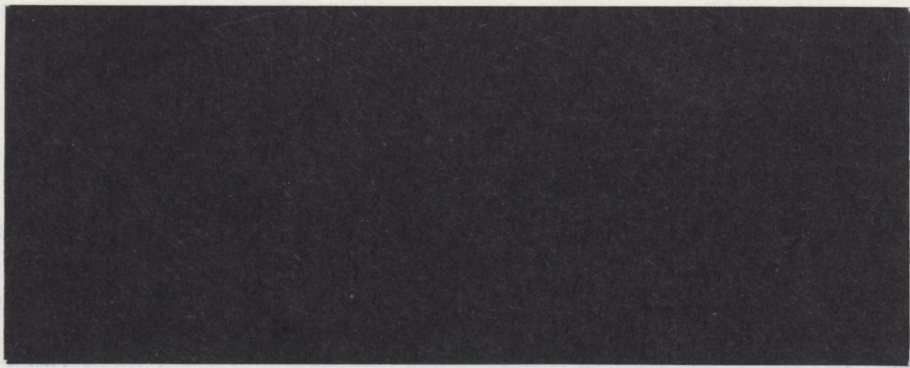
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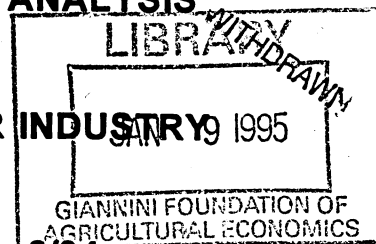
WORKING PAPER





CNHC

**COMPETITIVENESS ANALYSIS
OF THE
CANADIAN BROILER INDUSTRY 1995**



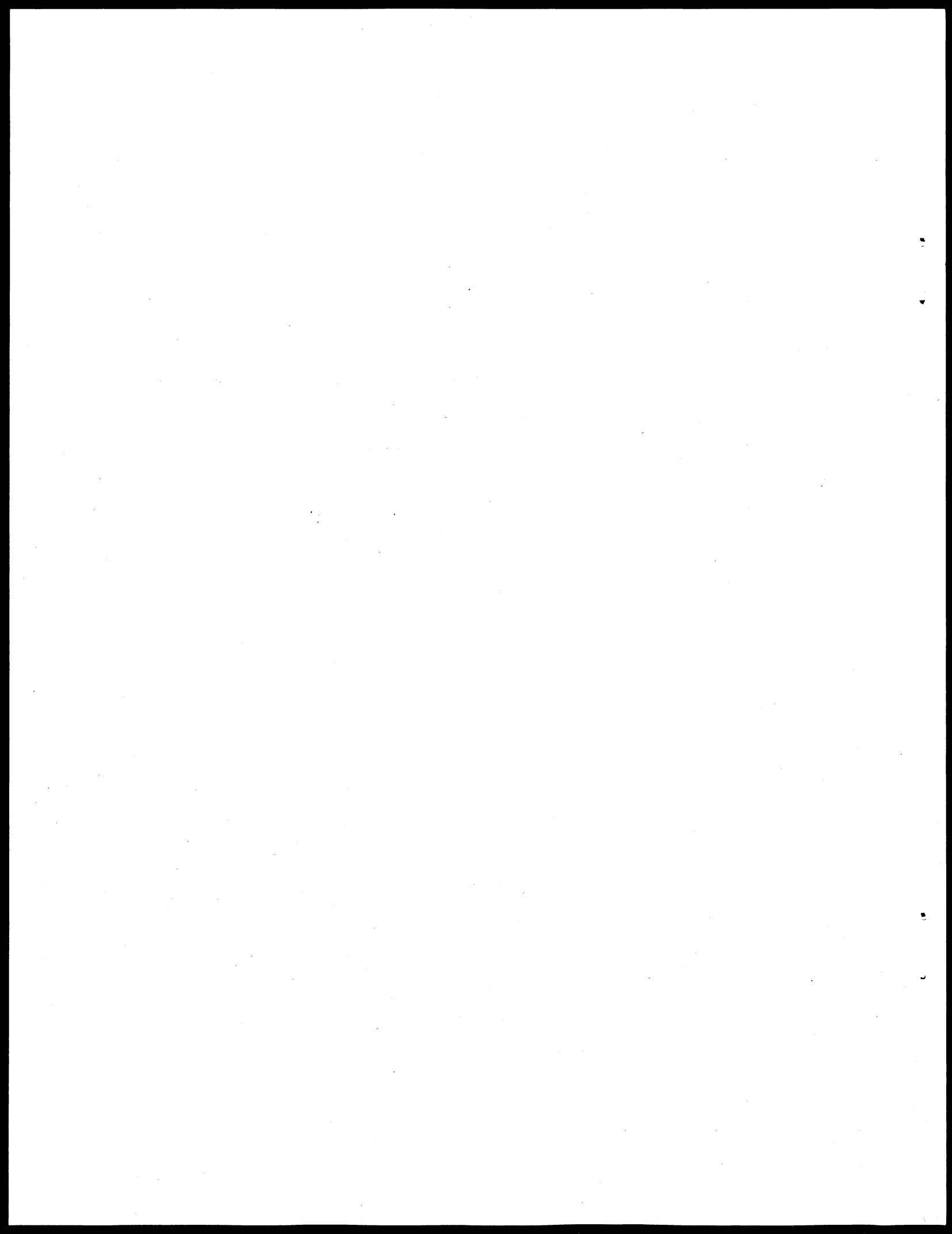
Working Paper 6/94

DECEMBER 1994

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EXECUTIVE SUMMARY

The broiler chicken industry is by far the largest of the three major components (chicken, eggs and turkey) of the Canadian poultry system. In 1991, farm cash receipts totalled \$933.7 million for broilers, \$380.8 million for eggs and \$223.5 million for turkeys.

The report uses a framework developed by Agriculture Canada to analyze the international competitiveness of the chicken industry. This includes looking at trends in performance and analyzing factors that have affected its past performance and those that are likely to affect it in any significant way in the future. The report also brings out the implications of the results of the analysis for government policy and industry.

Performance

Chicken production has grown in Canada, as it has worldwide. The rate of growth, however, has been slower than in the U.S. (and in Europe). According to industry sources, the composition of output is also changing: 20 years ago whole birds represented 40% of output and further processed products less than 10%; currently whole birds represent 10%, further processed products account for about 30% (includes deboned meat that is sold at retail) and parts about 60%.

Higher output growth in the U.S. than in Canada reflects faster growth in per capita consumption in the U.S., perhaps due to lower retail prices and more rapid new product development, as well as a greater export orientation.

Canada is a domestically oriented producer, and a net importer of chicken while the U.S. is a growing net exporter. In the U.S., slower growth in the domestic market was one reason to look for growth opportunities in foreign markets.

Canadian imports of highly processed products such as dinners and fowl meat for processing have been increasing (i.e., products not on the Import Control List); at the same time, there has been increasing recent interest in exports, particularly in B.C. and Ontario.

Prices in Canada are higher than those in the U.S. at all levels from input supply through to end use, and the gap increases as the product moves downstream. Retail chicken prices have increased relative to pork and beef prices in Canada, while there has been a decline in U.S. retail chicken prices relative to U.S. pork and beef prices.

The rate of return on assets for Quebec and Ontario poultry farms (11.3%) is higher than for Alabama-Arkansas-Georgia-North Carolina poultry farms (9.14%). In Canada, food processing overall is both more profitable and more stable (10% Return on Investment) than total manufacturing.

Determinants of Industry Competitiveness

Canadian costs of production at the farm and processing levels are generally higher than in the U.S. At the farm level, fixed costs are nearly double those in the U.S., mostly due to higher housing costs necessary because of the severe Canadian winters; variable costs are 40-50% higher, mostly attributed to higher chick costs. Feed cost is not a significant disadvantage for Ontario (which is the largest chicken producer) and the Prairie Provinces, but is a factor elsewhere. Assembly costs are also higher due to the significantly wider spatial distribution of Canadian farms from processing plants. Labour costs are higher in Canada both at farm and processing levels.

About half of the Canada-U.S. difference in processing costs is accounted for by labour and another 30% by packaging and waste disposal costs. U.S. labour productivity is higher because of economies of size, more automation, and access to low cost labour.

Canadian processors normally have not been able to exercise the same degree of size and quality control on live birds delivered to their plants as U.S. producers, which tends to lower net income (e.g., higher levels of utility grading, lower returns if product does not meet buyer specifications).

The structure of the U.S. industry may be described as a processor driven vertically integrated system with farmers growing product under contract. The concentration of chicken production in southeastern U.S. has induced major equipment manufacturers and major independent breeders to locate in the area, thus forming a "competitive cluster". In Canada, the supply management system has maintained widely dispersed and relatively small-sized individual production units. Supporting and related industries are generally more widely dispersed and higher cost operations than their U.S. counterparts.

Provincial distribution of production and primary processing activities in Canada reflect a quota system which does not fully take into account comparative advantage in production, processing and distribution. The level of cooperation between growers and processors varies by province from intense rivalry in some provinces to a fair degree of cooperation in others. Independent further processors frequently complain about a lack of assurance of availability of adequate volumes of raw meat when required. A recent study of coordination systems in other industries and countries outlined a range of alternative coordination systems in the poultry and other industries (Appendix A).

Demand conditions are somewhat similar in Canada and the U.S. New product development in response to changes in tastes and preferences are usually introduced and diffused more quickly in the U.S.

Current Government Policies

Both Canada and the U.S. target assistance to the chicken industry but the policy instruments used and the level of effort are very different. The Canadian government provides significant support to the chicken industry through legislation which permits the establishment of a supply management system. Much of the government support to the U.S. chicken industry, on the other

hand, is of the type that is generally available to other agricultural industries. In Canada, government support to the industry is estimated to be about 51.4% of the value of production; 46.0% as targeted support through regulation (not government expenditure) and 5.4% is of the generally available kind. In the U.S., government assistance to the chicken industry accounts for 17.4% of the value of production, nearly all of which is through non-commodity specific programs.

Looking Ahead

Demand for chicken and further processed products will remain high in the years to come because of population increases, demographic changes and consumer preferences. Price and quality responses by the Canadian industry will determine whether the anticipated shift in demand will translate into corresponding increases in output of domestic product.

Governments and consumers in most developed countries are increasingly aware of and concerned about animal welfare, environmental and food safety issues. Such concerns may get reflected in waste disposal or other regulations and/or consumer demand for certain product characteristics. Again, industry responsiveness to changing consumer attitudes will be critical for economic success.

International competitiveness of the industry will hinge on governments and institutions providing a flexible environment in which industry participants can work cooperatively to better respond to market needs. International trade commitments in CUSTA, NAFTA, and the new GATT are but one component, albeit an important one, of the changing future environment. Industry strategies and government policies will need to be well integrated in pursuit of new and changing economic opportunities.

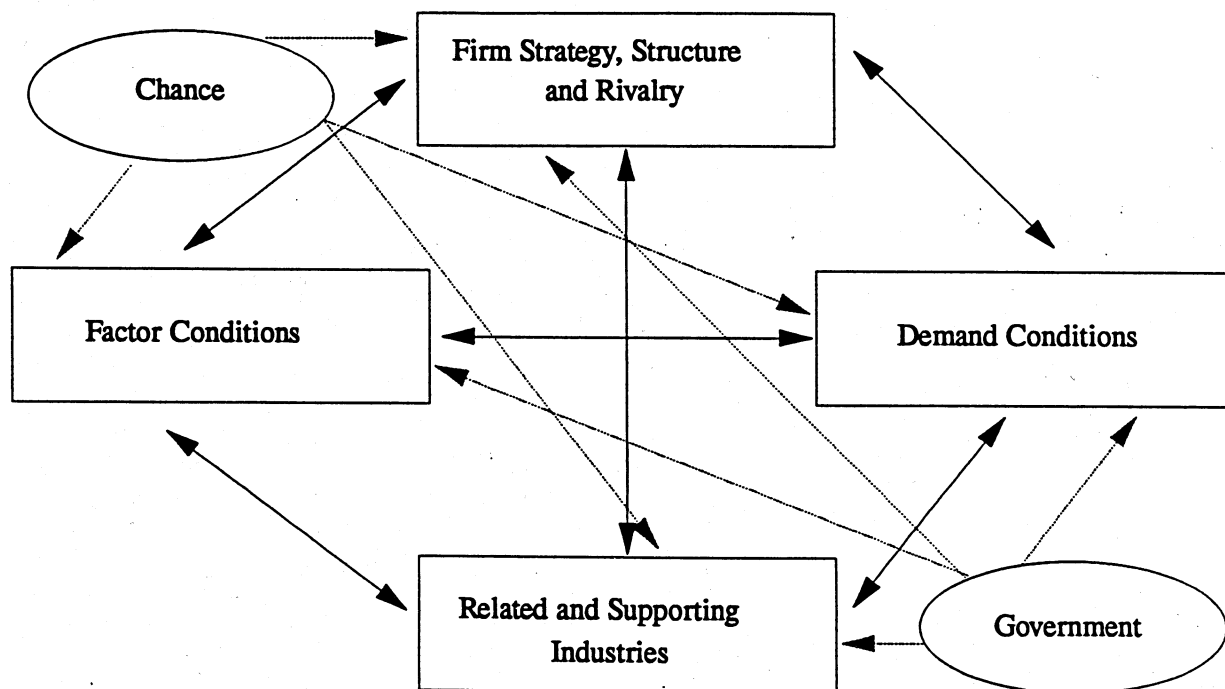
Conclusions and Implications

The supply management system for chickens has successfully achieved most of its initial objectives but there have been fallouts of this policy that have adversely affected the Canadian industry's ability to compete in international markets and to be responsive to even the domestic market. Following implementation of the new GATT, the countries will be operating under changed trading rules. The new trade environment, along with changing market and economic conditions, point to the need to re-examine the appropriate future direction of industry strategy and public policy. A number of specific issues are identified for further consideration.

1.0 INTRODUCTION

A framework for analyzing the competitiveness of the agri-food sector (or parts of it) was recently developed by Agriculture Canada (Working Paper 3-93). That framework outlines ways to generate the information needed for: (1) assessing industry competitiveness (Figure 1.1); (2) evaluating factors that determine its competitiveness, and (3) identifying the implications for industry action and government policies and programs.

FIGURE 1.1
DETERMINANTS OF COMPETITIVENESS



Source: Porter, 1990, p.127

This is a first attempt at applying the "framework" to a specific industry, in this case the chicken industry. Although, in many instances, broiler, egg and turkey producers use the same input suppliers, differences among these industries are significant enough to justify separate examination. The chicken industry was studied first because of its greater economic importance and more comprehensive information base when compared with the other two components of the poultry and egg industries.

The analysis in this report is based on (1) information available from published Canadian and foreign government documents, (2) records and studies of industry organizations/associations, (3) a Policy Branch commissioned study entitled Alternative Business Linkages: The Case of the Poultry Sector, September 1993, and (4) discussions with representatives of industry and governments.

Although this report on the competitiveness of the chicken industry focuses on production and processing sectors, information on related and supporting industries such as input suppliers and distributors is incorporated where relevant and available.

The primary objective of this analysis is to develop a common and widespread understanding of the competitive performance and potential of the industry both currently and in the future. Such information and understanding is pre-requisite for productive industry-government dialogue for the further and timely development of industry strategies and government initiatives.

The principal farm product for chickens is the broiler, commercially defined as chicken produced for meat, under 2 kg liveweight and 6-7 weeks old. Roasters are heavier birds, over 2 kg liveweight, and 8-10 weeks old at slaughter. Heavier birds are generally used in further processed products. Statistical data, such as those for trade and consumption, generally do not distinguish between the two weight categories.

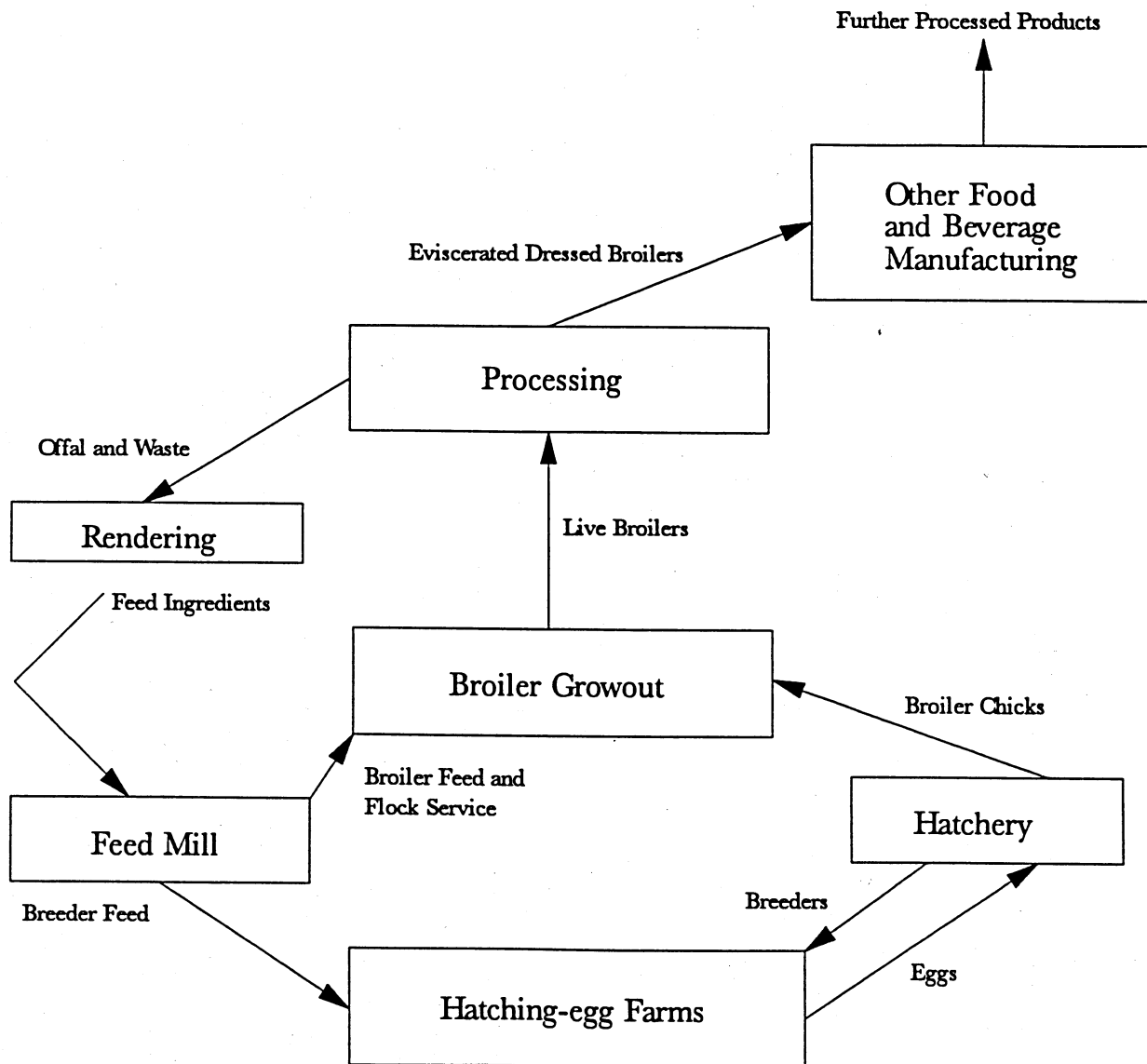
The broiler chicken industry is by far the most economically important of the three major components (chickens, eggs and turkeys) of the Canadian poultry system. In 1991, farm cash receipts totalled \$933.7 million for broilers, \$380.8 million for eggs and \$223.5 million for turkeys. At the farm level, each of the above three products as well as broiler hatching eggs (an input into the production of broilers) is governed by a supply management system. Each has its own organizational structure, comprised of a national agency and provincial marketing boards for managing supplies and administering prices.

In the chicken industry, "primary processing" generally refers to slaughtering, eviscerating and cutting up of live product. "Further processing" involves manufacturing high value-added products using young and/or mature chicken as well as at times, other meats. In Canada, while several of the large primary processors have integrated forward into further processing a substantial amount of further processing is still carried out by independent firms.

The product flow in the broiler industry begins with the eggs from the breeder farm sent to the hatchery (Figure 1.2). The hatched chicks are sent to the grow-out farms where they grow to market weight in 6-8 weeks. Once the birds reach market weight, they are sent to a slaughtering plant where they are processed into "eviscerated/dressed broilers". The majority of these birds (whole or cut up) are shipped to the retail or food service sectors but an increasing proportion is going to further processing plants for the manufacture of high value-added products.

FIGURE 1.2

PRODUCT FLOW CHART



2.0 PERFORMANCE MEASURES

The performance of an industry with respect to its economic contribution to the nation's wealth may be assessed by analyzing trends in variables such as production, prices, trade and profitability. A measure of international competitive performance, however, also requires the examination of ratios such as market shares in domestic and/or foreign markets.

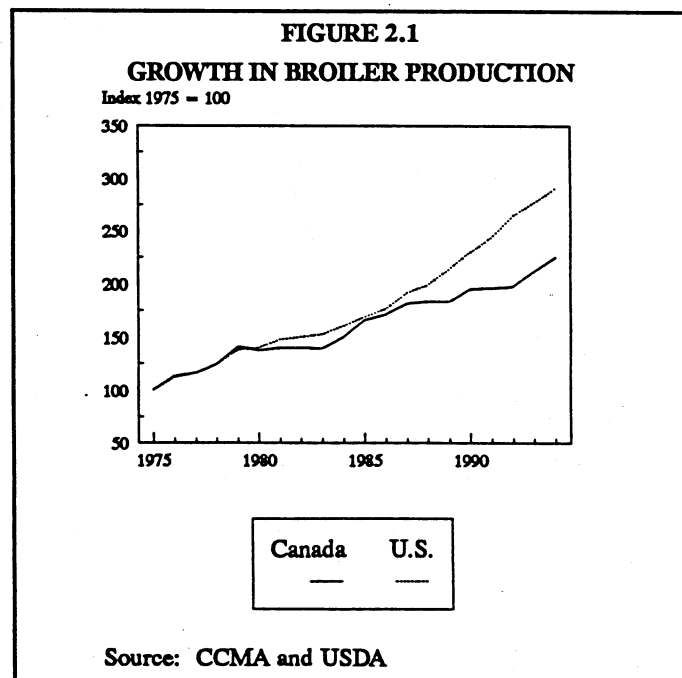
In this study, trends in variables such as production, trade and prices for chicken in Canada are examined against only those in the U.S. It is assumed that countries other than the U.S. would not compete in the Canadian market for fresh chicken because of considerations in the transportation of perishable products to distant places. Moreover, few countries currently meet Canada's standards for processing plant approvals. With respect to further processed chicken, except for small volumes of specialty products, most exporting countries may find it difficult to match the low price of U.S. product.

Performance of the Canadian chicken industry with respect to that of the U.S. industry reflects two realities: (i) that there are differences in the usual factors of competitiveness (input costs, primary factors of production, demand conditions), and (ii) that the Canadian industry is regulated through a set of instruments while production and marketing of chicken is unregulated in the U.S.

2.1 Growth in Production

Growth in broiler production in Canada has been impressive in the last fifteen years (Figure 2.1). A comparison with growth in U.S. broiler production, however, shows that:

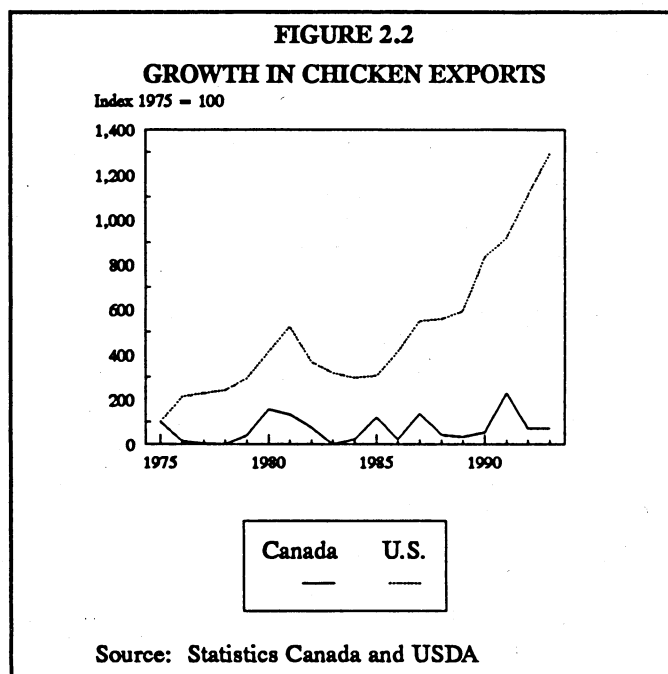
- At 603 kilotonnes, Canadian broiler production in 1993 was 112% higher than that in 1975 whereas the increase in the U.S. was 176% (10,056 kilotonnes in 1993).
- Between 1975 and 1980, the yearly production growth was similar in the two countries.
- Between 1980 and 1985, growth in Canada lagged behind that in the U.S. in the first three years but was greater than that in the U.S. in 1984 and 1985, i.e., there was some sluggishness in Canada but it was able to catch up as chicken nuggets took off in Canada as they had done in the U.S. in the early 1980s.



- In recent years, however, Canada has not kept pace with the growth in the U.S. For example, between 1986 and 1993, chicken production in the U.S. increased 56% (average of 8% per year) while that in Canada rose 23.6% (average of 3.4% per year). One of the explanations offered is that in the U.S., broiler production is increasing to satisfy the high domestic demand for white meat; the resulting surplus of dark brown meat is being exported to the Caribbean basin. In some years, surplus supplies of chicken have been exported with assistance from the U.S. government's Export Enhancement Program (EEP). In Canada, the supply management system allows production quota to exceed the often conservative forecast of domestic demand only if proof of guaranteed sales to foreign markets are provided.

2.2 Growth in Exports

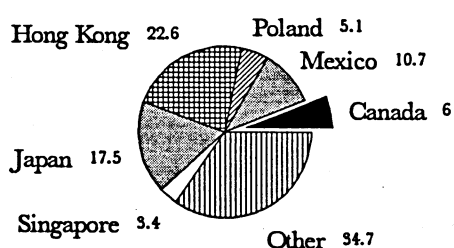
Over the last fifteen years, Canadian chicken exports have fluctuated around very low levels (Figure 2.2). In the U.S., however, exports rose steadily in the 1970s but declined between 1982 and 1984, a period when domestic demand was growing at a rapid rate following the introduction of chicken products in fast-food restaurant menus. As well, access to export markets was curtailed by the strength in Brazilian and EC exports; it has been alleged that these countries subsidized exports of their respective industries. In retaliation to intervention by other countries, the U.S. government used its EEP to stimulate exports in the late 1980s, particularly for exports to the Middle East.



The U.S. chicken industry continues to search aggressively for foreign markets for its products, in particular, for brown chicken meat which is generally surplus to domestic requirements. About half of the production increase between 1986 and 1993 has been directed to export markets. In 1993, the U.S. exported approximately 816 M kg chicken, up from 694 M kg in

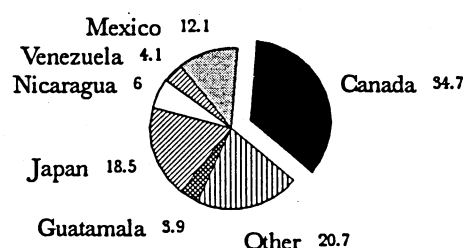
1992. Import demand for chicken, in particular leg parts, has been particularly strong in Pacific Rim countries such as Japan, Hong Kong and Singapore (Figure 2.3). Canada is the most important market for U.S. exports of stewing hens for which Canada has no import restriction (Figure 2.4). Mexico and Canada are expected to remain important and steady markets for U.S. exports and shipments to the Former Soviet Union may increase if agreements are reached on export credit arrangements. On the other hand, China's exports to Japan, an important market for the U.S., are increasing rapidly and China's share in 1993 was forecast at 20%.

FIGURE 2.3
U.S. BROILER EXPORTS:
SHARES OF MAJOR IMPORTERS IN 1992



Source: USDA Livestock & Poultry,
Situation & Outlook

FIGURE 2.4
U.S. MATURE CHICKEN EXPORTS:
SHARES OF MAJOR IMPORTERS IN 1992



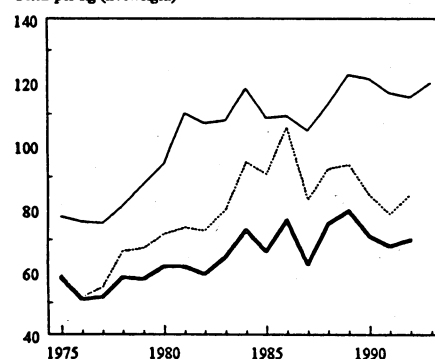
Source: USDA Livestock & Poultry,
Situation & Outlook

2.3 Farm Prices

Because of the high degree of vertical integration, farm prices for the U.S. are not market transaction prices but are estimated by deducting processing margins from wholesale prices. Therefore, Canadian and U.S. price levels are not strictly comparable. Figure 2.5 shows that producer prices in Canada are higher than those estimated for independent producers in the U.S. and that the gap has widened considerably since the mid-1980s.

FIGURE 2.5
PRODUCER PRICE FOR BROILERS -
CANADA AND U.S.

Cents per kg (liveweight)



Ontario U.S. (\$CAN.) U.S. (\$U.S.)

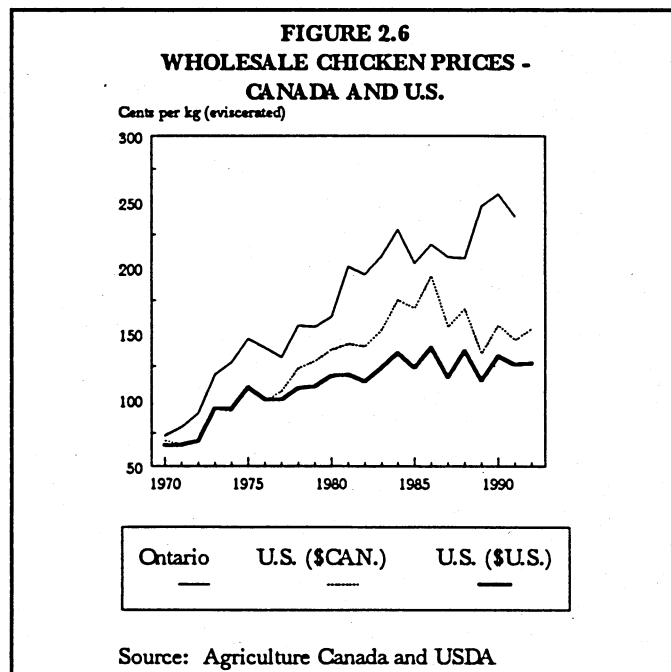
Source: Agriculture Canada and USDA

2.4 Wholesale Prices

Wholesale prices for whole, fresh, Grade A, eviscerated broilers increased sharply in both Canada and the U.S. in the early 1970s because of large increases in farm prices due to rising feed costs. Feed prices in the U.S. jumped from U.S. 19.84 ¢/kg in 1972 to 36.16 ¢/kg in 1973, a 82% increase in one year. Generally, wholesale prices have tended to follow farm price movements.

Over the 1973 to 1990 period, wholesale broiler prices increased about twice as much in Canada as in the U.S. In Canada, the sharpest increases occurred in 1981 and 1989 (Figure 2.6).

In 1990, wholesale prices for broilers declined 9.2% in the U.S. but rose 3.7% in Canada. The decline in the U.S. reflected an oversupply situation as a result of a rapid build up in processing capacity in late 1980s and slower growth in demand in 1990 and 1991. In Canada, production quotas for 1990 were conservative and resulted in some upward pressure on-farm and wholesale prices. Canadian wholesale prices declined substantially toward the end of 1990 and remained in the \$2.35-\$2.45 per kilogram range for several quarters.

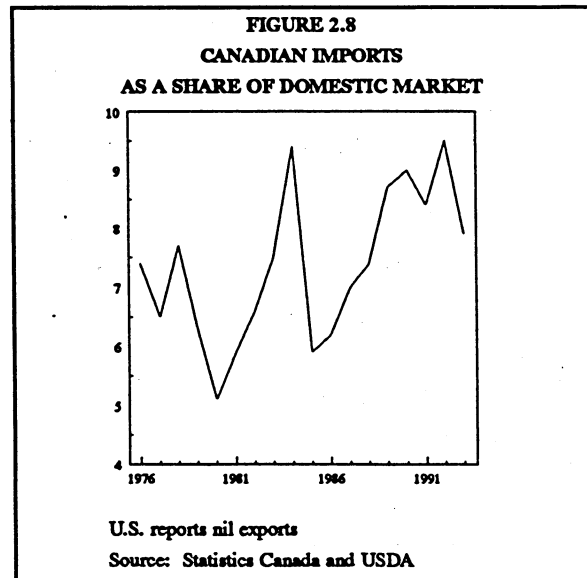
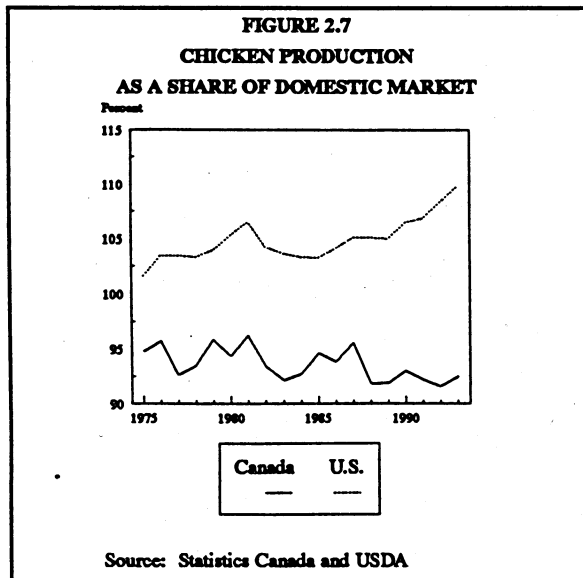


2.5 Market Shares

Trends in market shares in domestic and/or export markets are indicators of competitiveness only if trade restrictions are non-existent. When the market share is distorted through border controls, measuring underlying competitiveness requires rigorous analysis of cost structures and other determinants of competitiveness in competing countries.

2.5.1 Domestic Production and Imports Shares of Canadian Market

Canada was a net importer of chicken over the 1975 to 1992 period while the U.S. was a net exporter over the same period (Figure 2.7). Canadian production as a share of domestic market decreased from 94.7% in 1975 to 91.6% in 1993 with significant dips in 1977, early 1980s and 1988. In Canada, the share dropped about five percentage points in 1988, primarily because of a 20% increase in imports of chicken parts. Canadian chicken imports as a share of domestic market rose steadily between 1986 and 1990 (Figure 2.8). Conservative market demand forecasts and the additional access of 1.2% of domestic production allotted to the U.S. under the Canada-U.S. Trade Agreement (CUSTA) were the primary reasons for the rise in imports. The 1993 share of imports in the domestic market was 7.9%.



Imports of stewing hens and processed products (not on the import control list) are not included in the above data. In 1992, 49% of the domestic market for stewing hens was satisfied by imports.

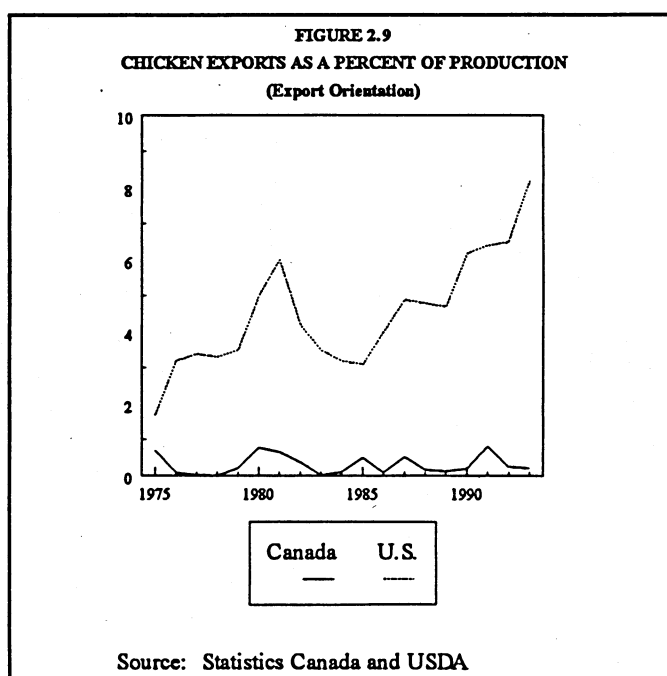
An increase in imports of highly processed products is supported by the following observations:

- proliferation of U.S. brand name products in Canadian supermarkets, particularly of high-priced gourmet foods;
- production shift of Nestle's and Campbell's lines to the U.S. and subsequently, importation of these products into Canada;
- popularity of Price Clubs, which import processed products in large sized packages for retailing at unit prices lower than those in supermarkets; and
- in the U.S., the ratio of production to domestic market has increased about five percentage points since 1975 as the U.S. product has made strong inroads in export markets.

2.5.2 Chicken Exports as a Percentage of Production

Exports have not been significant for Canada's chicken industry. They remained at less than one percent of domestic production during the 1975 to 1993 period (Figure 2.9). Canadian producers were constrained to satisfying the domestic market by opting for a supply management system (see 2.5.5).

Export orientation of the U.S. chicken industry appears to be improving even while the domestic market is expanding rapidly; most significant gains were made in the last five years. In 1993, the U.S. is estimated to have exported 8.2% of its production.



2.5.3 Exports as a Share of Total Agri-food Markets

Chicken exports (in value terms) are less than one tenth of one percent of total Canadian agri-food exports. In 1992, about 36% of Canadian chicken exports were destined for the U.S., 59% for St. Pierre et Miquelon, and the remaining 5% to all other countries. The share of chicken exports in total agri-food exports has not changed during the last decade although the destination of exports varies dramatically from one year to the next.

2.5.4 Canadian Exports as a Share of U.S. Market

Canadian exports have not made their mark in the U.S. market (Table 2.1).

TABLE 2.1
CHICKEN EXPORTS AS A SHARE OF U.S. MARKET

Year	Exports (tonnes)	U.S. Market (kilotonnes)	Share (%)
1980	3050	4851	0.06
1982	1425	5219	0.02
1984	461	5677	0.01
1986	461	6177	0.01
1988	804	6909	0.01
1990	1088	7847	0.01
1991	4644	8310	0.06
1992	1380	8798	0.02
1993	1406	9157	0.02

Source: Statistics Canada and USDA

2.5.5 B.C. Chicken Industry

The B.C. Chicken Marketing Board, which had been a member of the Canadian Chicken Marketing Agency since its inception in 1978, withdrew its membership effective December 31, 1989. Since that year, the B.C. chicken industry has experienced an average growth in production of 11% per year and growth in 1994 is predicted to be 14%. Growth in demand is attributed to population increase and the ethnic diversity of the population.

2.6 Profitability/Financial Health

An industry is competitive if its profitability is stable or improving at the same time that it is maintaining/increasing its market share. Farm prices for broilers are based on a cost of production formula that includes a return on investment, as well as on market conditions. The industry, therefore, may be considered to be profitable. The level of profitability of individual operations, however, may vary considerably depending on factors such as size efficiencies and management of operations.

Information gathered in the Farm Financial Survey (FFS) for 1991 and taxfiler data for 1991 are used to draw the financial picture for Canadian broiler farms. For a Canada-U.S. comparison, the Canadian data for Quebec and Ontario, from the Farm Financial Survey (for 1989) are compared with American data for Alabama-Arkansas-Georgia-North Carolina from the Farm Costs and Returns Survey (FCRS). For the purpose of comparison, family wages were removed from farm expenses for both surveys; accordingly, net cash farm income figures are before wages paid to the family. This approach ensures that there is no bias associated with different tax policies in regard to wages to family members in the two countries. At the national level, family wages per farm (average of all farms) in Canada are \$5,505 compared to \$1,166 per farm in the U.S. Not deducting wages to family members as expenses has the effect of raising cash income per farm in Canada relative to that in the U.S.

Canadian processing firms are largely privately held companies and access to financial statements of an adequate sample of processors could not be obtained for the purpose of this report.

2.6.1 Sources of Income and Net Cash Flow

According to the Farm Financial Survey, there were 1,356 broiler farms (those with 51% or more of total cash receipts from broiler sales) in Canada in 1991 with sales of \$2,000 or more per year. Forty four percent of these farms had sales less than \$250 thousand with average non-farm income of \$70,178 per year (Table 2.2). On average, non-farm income accounted for approximately 70% of the net cash flow on these farms. As may be expected, the absolute and relative importance of off-farm income was greater for broiler operations in the lowest revenue grouping. In fact, average net cash flow on farms with sales of less than \$250,000 were higher than on those with sales between \$250,000 and \$599,999 because of the large contribution of non-farm income in the lowest rates category. Farm income before depreciation increased with sales.

TABLE 2.2 FINANCIAL STATISTICS OF BROILER FARMS BY SALES CLASS - 1991

	Under \$250,000	\$250,000 to \$599,999	\$600,000 and over
Number of farms	599	397	360
Percentage of farms	44.2	29.3	26.5
Quota (\$)	153,813	399,493	741,260
Assets (\$)	980,937	1,135,787	2,129,569
Liabilities (\$)	186,890	185,803	373,142
Net worth (\$)	794,047	949,984	1,756,427
Percentage equity			
Farm sales (\$)	138,764	372,667	1,013,739
Gov't payments (\$)	4,957	5,736	16,833
Total revenue (\$)	153,720	378,403	1,030,623
Interest expense (\$)	18,677	22,154	46,293
Family wages	4,665	14,818	64,866
Other expenses (\$)	107,803	205,043	851,240
Farm income before depreciation (\$)	35,918	73,360	179,383
Non-farm income (\$)	70,178	9,184	23,040
Net cash flow (\$)	98,399	74,137	185,338
Number of operators	1.31	1.79	2.06
Oldest operator (years)	43	48	49

Source: Farm Financial Survey.

2.6.2 Cash Flow and Equity

The FFS survey also shows that in 1991, nearly 90% of broiler producers surveyed had more than 50% equity and \$20,000 net cash flow, in fact, more than half had more than 50% equity and \$65,000 in cash flow (Table 2.3). These farmers are in the strongest position to borrow funds from financial institutions to expand should an opportunity present itself. By comparison, only 16% of all farms had over 50% equity and \$65,000 in cash flow.

TABLE 2.3 PROFILE OF CANADIAN PRODUCERS

		<u>BROILERS</u>		<u>ALL FARMS</u>	
		Equity			
		<50%	>50%	<50%	>50%
C a s h F l o w	<\$20,000	2.3%	4.6%	3%	28%
	>\$20,000	4.1%	89% (34.3% had cash flow \$20,000- 65,000; 54.7% had cash flow >\$65,000)	6%	63% (47% had cash flow \$20,000- 65,000; 16% had cash flow >\$65,000)

Source: Farm Financial Survey, 1991.

2.6.3 Income and Expenses

The taxfiler data base defines poultry farms as those that derive 51% or more of their income from farming operations from poultry.

Taxfiler data shows that Canadian poultry farms tended to be specialized in 1991 as more than 90% of the total revenue on these farms was derived from poultry receipts.

Average poultry farm size was largest in British Columbia with \$465 thousand in cash receipts from poultry (Table 2.4) and smallest in Alberta at \$260 thousand.

TABLE 2.4 POULTRY -- PROFILE OF 1991 REVENUES, EXPENSES & MARGINS BY SIZE OF FARM

	\$10,000- 24,999	\$25,000 - 49,999	\$50,000- 99,999	\$100,000- 249,000	\$250,000- 499,999	\$500,000 +	Avg. all revenue classes
British Columbia							
Number of Farms				60	105	110	320
% of Poultry Farms				18.75	32.81	34.38	
Poultry Receipts th \$				166,185	353,196	781,110	426,566
Gross farm receipts th \$				176,508	365,835	873,193	464,824
Tot. farm expenses th \$				173,379	324,181	784,096	419,437
Net Cash Farm Income before depreciation				3,129	41,654	89,097	45,387
<u>Margin %</u>				1.77	11.39	10.20	9.76
Alberta							
Number of Farms			35	75	75	45	325
% of Poultry Farms			10.77	23.08	23.08	13.85	
Poultry Receipts th \$			73,059	124,523	309,583	710,682	217,805
Gross farm receipts th \$			81,294	164,110	367,106	815,324	259,979
Tot. farm expenses th \$			73,883	146,156	318,168	728,034	229,401
Net Cash Farm Income before depreciation			7,411	17,954	48,938	87,290	30,578
<u>Margin %</u>			9.12	10.94	13.33	10.71	11.76
Saskatchewan							
Number of Farms				30			80
% of Poultry Farms				37.50			
Poultry Receipts th \$				176,391			283,835
Gross farm receipts th \$				211,475			348,391
Tot. farm expenses th \$				170,400			299,238
Net Cash Farm Income before depreciation				41,075			49,153
<u>Margin %</u>				19.42			14.11
Manitoba							
Number of Farms				40	50		145
% of Poultry Farms				27.59	34.48		
Poultry Receipts th \$				176,533	270,171		253,974
Gross farm receipts th \$				198,470	327,549		293,163
Tot. farm expenses th \$				169,699	270,822		246,727
Net Cash Farm Income before depreciation				28,771	56,727		46,436
<u>Margin %</u>				14.50	17.32		15.84
Ontario							
Number of Farms	90	140		290	290	270	1,140
% of Poultry Farms	7.89	12.28		25.44	25.44	23.68	
Poultry Receipts th \$	25,425	55,367		150,558	337,488	772,199	313,377
Gross farm receipts th \$	36,513	63,080		165,283	363,947	897,551	355,367
Tot. farm expenses th \$	35,257	43,880		139,644	306,509	783,120	305,374
Net Cash Farm Income before depreciation	1,256	19,200		25,639	57,438	114,431	49,993
<u>Margin %</u>	3.44	30.44		15.51	15.78	12.75	14.07

	\$10,000- 24,999	\$25,000- 49,999	\$50,000- 99,999	\$100,000- 249,000	\$250,000- 499,999	\$500,000 +	Avg. all revenue classes
Quebec							
Number of Farms	35	45	85	145	135	160	595
% of Poultry Farms	5.88	7.56	14.29	24.37	22.69	26.89	
Poultry Receipts th \$	13,069	24,917	61,468	150,176	317,509	911,983	359,973
Gross farm receipts th \$	15,184	35,031	76,040	170,295	362,325	980,291	395,874
Tot. farm expenses th \$	11,632	31,829	51,824	132,439	306,568	862,122	339,101
Net Cash Farm Income before depreciation	3,552	3,202	24,216	37,856	55,757	118,169	56,773
<u>Margin %</u>	23.39	9.14	31.85	22.23	15.39	12.05	14.34
New Brunswick							
Number of Farms							45
% of Poultry Farms							
Poultry Receipts th \$							442,912
Gross farm receipts th \$							457,123
Tot. farm expenses th \$							410,728
Net Cash Farm Income before depreciation							46,395
<u>Margin %</u>							10.15
Nova Scotia							
Number of Farms						35	70
% of Poultry Farms						50.00	
Poultry Receipts th \$						686,760	458,442
Gross farm receipts th \$						870,928	563,510
Tot. farm expenses th \$						755,837	483,995
Net Cash Farm Income before depreciation						115,091	79,515
<u>Margin %</u>						13.21	14.11
P.E.I.							
Number of Farms							30
% of Poultry Farms							
Poultry Receipts th \$							178,334
Gross farm receipts th \$							194,169
Tot. farm expenses th \$							165,686
Net Cash Farm Income before depreciation							28,483
<u>Margin %</u>							14.67

Source: Statistics Canada, Agriculture Division, Taxation Data Program.

Average margins (net farm income before depreciation as a percent of total revenue), on the other hand, was smallest in British Columbia at 9.76% and largest in Manitoba (15.8%); British Columbia was in an expansionary phase in early 1990s which might explain its relatively high expense levels. Farms in Manitoba were most profitable with average margin of nearly 16%. The contribution of feed costs to total expenses is the lowest in Ontario, reflecting proximity to corn and soybeans which usually are the major ingredients in broiler rations.

2.6.4 Canada-U.S. Comparison

Balance Sheet

Average asset values differ substantially between Canadian and U.S. poultry farms (Table 2.5). In 1989, total asset value was approximately twice as high in Quebec-Ontario at \$893,966 compared to \$403,700 for the region of Alabama-Arkansas-Georgia-North Carolina. More than half of this difference is attributable to the value attached to quota in Canadian assets.

The average debt-to-asset ratio was similar in the Canadian and American regions; 0.21 in the Quebec-Ontario region and 0.26 in the U.S. region. However, the distribution of liabilities by term was different; poultry farms in the U.S. had a higher percentage of intermediate-term liabilities while Canadian farms had a higher percentage of long term liabilities.

Income Statement

Levels of farm sales and other farm income, direct program payments, expenses, and net cash farm income were considerably higher in Canada. The importance of the direct program payments in total farm revenue was very low in both countries but higher in Canada. They represented about 2% of the farm revenue in the Quebec-Ontario region and were less than 1% in the U.S. region. These direct payments were likely to be for non-poultry operations on the farms.

The rate of return on assets was higher for poultry farms in Quebec-Ontario at 11.3%; Alabama-Arkansas-Georgia-North Carolina poultry farms had an average rate of return on assets 9.14%.

TABLE 2.5 FINANCIAL CONDITIONS OF CANADIAN & AMERICAN POULTRY FARMS, 1989.

	CANADA		U.S.	
	QUEBEC ONTARIO	ALABAMA, ARKANSAS, GEORGIA, NORTH CAROLINA	ALABAMA, ARKANSAS, GEORGIA, NORTH CAROLINA	ALABAMA, ARKANSAS, GEORGIA, NORTH CAROLINA
<u>BALANCE SHEET</u>				
ASSETS				
CASH BONDS SAVINGS & ACCOUNT RECEIVABLES	76,311	17,236		
FEED & SUPPLIES	7,997	851		
CROPS FOR SALE	5,216	2,457		
MARKET LIVESTOCK	19,089	18,385		
TOTAL CURRENT ASSETS	108,553	38,929		
BREEDING LIVESTOCK	22,618	5,801		
EQUIPMENT	92,515	24,685		
QUOTA	265,367	---		
TOTAL INTERMEDIATE ASSETS	380,499	30,486		
TOTAL LONG TERM ASSETS (Land & Bld.)	404,913	334,285		
TOTAL ASSETS	893,966	409,700		
LIABILITIES				
TOTAL CURRENT	28,066	1,467		
TOTAL INTERMEDIATE	22,282	61,889		
TOTAL LONG	141,905	39,917		
TOTAL LIABILITIES	191,653	103,273		
NET WORTH	702,313	300,428		
TOTAL LIABILITIES & NET WORTH	893,966	409,700		
<u>CASH FLOW</u>				
NET CASH FARM INCOME	82,880	25,230		
PRINCIPAL REPAYMENT	8,303	10,171		
CASH FLOW FROM FARM	74,577	15,059		
TOTAL NON-FARM INCOME	19,023	21,281		
CASH FLOW FROM ALL SOURCES	93,600	36,340		
<u>INCOME AND EXPENSES</u>				
FARM SALES & OTHER FARM INCOME	360,505	63,307		
DIRECT PROGRAM PAYMENTS	8,206	261		
TOTAL REVENUE	368,711	63,568		
FARM INTEREST EXPENSES	18,136	11,668		
OTHER EXPENSES	267,696	26,670		
TOTAL EXPENSES	285,831	38,338		
NET CASH FARM INCOME	82,880	25,230		
NET CASH FARM INCOME (BEFORE INTEREST)	101,016	36,898		
NET CASH FARM INCOME (BEFORE DIRECT PROGRAM PAYMENTS)	74,674	24,969		
<u>RATIOS</u>				
A) FINANCIAL RATIOS:				
DEBT-ASSETS RATIO	0.21	0.26		
DEBT-EQUITY RATIO	0.27	0.34		
CURRENT RATIO	3.87	26.54		
RATE OF RETURN ON ASSETS	11.30	9.14		
RATE OF RETURN ON EQUITY	11.80	8.40		
ASSETS TURNOVER RATIO	0.41	0.16		
INTEREST-REVENUE RATIO	0.05	0.18		
INTEREST-EXPENSES RATIO	0.06	0.30		
DEBT-SERVICE RATIO	3.82	1.69		
DEBT-SERVICE RATIO (incl. NON-FARM. INCOME)	4.54	2.66		
OPERATING MARGIN BEFORE INTEREST	0.27	0.58		
OPERATING MARGIN AFTER INTEREST	0.22	0.40		
B) OTHER RATIOS:				
DIRECT PROGRAM PAYMENTS/TOTAL REVENUE	0.02	0.00		
NET CASH FARM INCOME/FAMILY INCOME	0.81	0.54		
C) % OF FARM:	100.00	100.00		

Source: Gemmesaw II, C.M., et al., The Competitiveness of U.S. and Canadian Broiler Growout Enterprises.

3.0 INDUSTRY OVERVIEW AND STRUCTURAL CHARACTERISTICS

The North American chicken industry has experienced rapid production and consumption growth during the last three decades. Broad adjustments at the business level are often reflected in changes to the structural characteristics of the industry. This section provides an overview of the current level of activity in the broiler industry, a general description of the basic factors of production and the structure of the poultry production and processing industries.

3.1 Overview

3.1.1 Production

In 1992, Canadian commercial chicken production totalled 574 M kg (eviscerated weight) with an estimated total farm-gate value of \$915.7 M. In the U.S., 9,511 M kg of federally inspected eviscerated chicken were produced in 1992 with an estimated farm-gate value of U.S. \$9,156 M.

The sixteen-fold larger production in the U.S. relative to that of Canada reflects its larger population base, higher per capita consumption, higher exports and virtually no imports. In Canada, Ontario and Quebec accounted for 63.3% of total production; Arkansas, Alabama and Georgia are the most important chicken producing states in the U.S. (Table 3.1).

TABLE 3.1 CHICKEN PRODUCTION (VOLUME) SHARES BY REGION, 1992

Canada		United States	
REGION	SHARE	REGION	SHARE
Ontario	33.6	Arkansas	16.0
Quebec	29.7	Alabama	14.0
British Columbia	13.0	Georgia	14.0
Alberta	8.7	North Carolina	8.8
Manitoba	4.2	Mississippi	7.6
Nova Scotia	3.4	Texas	5.6
New Brunswick	2.7	Maryland	4.4
Saskatchewan	3.0	California	3.3
Newfoundland	1.3	Delaware	3.9
P.E.I.	0.4	Virginia	3.7
		Other States	18.7

Source: Statistics Canada, Production of Poultry & Eggs, 23-202 and U.S. Department of Agriculture.

3.1.2 Value-Added

In general terms, value-added refers to the increase that occurs in the value of a good or service as it passes through consecutive levels from production to marketing. Statistics Canada measures value-added by subtracting purchased commodity inputs used and contract work by others from the gross value of shipments. The ratio of value-added to wages, sales, number of plants and number of workers may be used to provide further insight into the competitiveness of a particular industry.

In Canada, the value of shipments from the 113 federally and provincially inspected poultry processing plants was \$2315.6 million in 1991. The majority of these processing plants were located in Ontario and Quebec - 37% and 26%, respectively. The respective shares of value of shipments from these plants, however, were 45.2% and 24.8% indicating a significantly higher level of value adding activity in Ontario. The some 12,000 persons employed in this industry represented slightly more than 5% of total food and beverage processing sector employment.

Processing plant sales in both Canada and the U.S. have been advancing from **whole bird to value-added products** such as cut-up parts and further processed products, and from frozen to fresh. According to industry sources, twenty years ago, whole birds represented 40% of output and further processed products less than 10%. Currently, whole birds represent 10%; chicken parts, 60% (eviscerated equivalent); and further processed products account for about 30% (includes deboned meat that is sold at retail).

Large poultry processors customarily include primary (slaughter and cutting/boning) and further processing in their corporate activities. On the whole, there tends to be a lower level of specialization in Canadian processing plants than in U.S. plants. In Canada, it is common for plants to perform both sets of activities i.e., slaughtering as well as manufacturing a wide range of highly processed products. In the U.S., however, processing plants tend to specialize either in primary or in further processing, although the stage at which primary processing ends and further processing begins is not clearly defined for either country.

In the U.S., processing is one stage in the activities of an integrated firm that typically controls several stages of poultry production and marketing through a combination of direct ownership and contractual arrangements. Between the breeder farms and the final markets, the first point of sale may occur at the slaughter-eviscerating plant, when the firm sells the eviscerated broiler at wholesale to a retailer, a distributor, or to a further processor; it is becoming increasingly common, for the first point of sale to occur from a further processing plant of a high value-added product.

Integrators in the U.S. maintain that ownership of several stages in the production cycle (feed mills, hatcheries, processing) combined with contracts for the grow-out stage, allows them to exercise a high level of control over cost and quality factors of live poultry supplies; factors such as feed formulations, disease control, breeding practices and bird weights. In Canada, decisions on many such aspects of production are made independently by the grower and the processor has no direct influence to ensure needed volumes of live broiler deliveries with desired characteristics.

3.1.3 Markets - Domestic and Foreign

Canada

Per capita consumption of chicken increased continually in both Canada and the U.S. for over two decades. This occurred primarily due to shifts in consumer preferences toward lean meats and deboned chicken and the development of new processed products for retail and fast food outlets. The larger increase in chicken consumption in the U.S. has likely occurred because: 1) U.S. consumers have tended to lead the North American trend of increasing consumption of lean meats; and 2) chicken prices relative to those of substitutes (pork and fowl meat) have fallen in the U.S. but risen strongly in the Canada (see section 4.3). Per capita consumption of chicken continues to rise in the U.S. and Canadian consumption appears to be falling further behind. These trends are occurring despite the fact that in Canada, Asian representation, which favours chicken consumption, is growing at a faster rate than in the U.S.

Canadian demand is primarily satisfied with domestic production. Imports are restricted by a global import quota to 7.5% of the previous year's domestic production, as reported by Statistics Canada. In 1992, as in most other years, imports were higher than these global quota limits; as a result of 3.8 M kg imported under supplementary permits. These permits are granted by External Affairs and International Trade Canada under the Import and Export Permits Act. Supplementary import permits are issued when there is a domestic shortage of the regulated product. It acts as an important safety valve in the operation of the supply management system.

The low levels of Canadian exports (949 tonnes in 1992) (Table 3.2), generally represent the disposal of offal to low-valued uses, although chicken feet have been exported to Hong Kong for food.

TABLE 3.2 CHICKEN TRADE IN 1992 (tonnes)

	Exports	Imports	Net Imports
<u>Canada</u>			
Live	0	3,444	3,444
Graded Chicken Carcass	16	5,421	5,405
Parts (evis. equiv.)	933	43,051	42,118
Total Trade (evis. equiv.)	949	51,916	50,967
<u>U.S.</u>			
Live (dress equivalent)	5,158	539 ¹	(4,619)
Whole	37,286	635	(36,651)
Parts	638,251	300	(637,951)
Total	680,695	1,474	(679,221)

¹includes "other" live poultry

Source: Agriculture Canada, Poultry Market Review, USDA.

Over the years, the form in which chicken is imported has shifted away from whole broilers and toward chicken parts and deboned meat. In 1992, 6.6% of the total imports of about 51.9 M kg (eviscerated weight) were in the form of live birds, 10.4% as graded carcasses and 83% were in the form of chicken parts (bone-in and boneless).

United States

The U.S. domestic market for broilers is satisfied entirely by domestic production. In addition, exports are becoming increasingly important for the U.S. broiler industry. In 1992, the U.S. exported 681 M kg of chicken (eviscerated weight basis) of which about 94% was in the form of cut-up chicken. Currently, Hong Kong and Japan are the top markets for U.S. chicken exports. Consumption and imports in these markets continue to rise while production declines.

United States' chicken exports to Mexico are also increasing rapidly, driven by growth in purchasing power, population increases and reduced border controls on entry of agricultural commodities into Mexico and increased efforts by U.S. processors to find markets for dark poultry meat which is less favoured by domestic consumers; Mexico was the third most important export market for U.S. chicken in 1992.

The North American Free Trade Agreement is expected to improve U.S. access to Mexican markets as current tariffs will be phased out over ten years, beginning in 1994. Canada, which ranked fourth among U.S. export markets in 1992, is expected to continue to be a modest but stable market for exports of fresh chicken because of restrictions under Canada's current supply management system and tariff levels that are expected to be established under the new GATT. U.S. exports to Canada of fowl meat (for use in manufacture of soups and some chicken dinners) and high value-added products not on Canada's Import Control List are expected to increase.

3.1.4 Institutional Structure/Role of Government

Canada

Canada's "organized marketing" system for chickens, supported by the Farm Products Agencies Act and the Export and Import Permits Act, involves control of production and imports through quotas. It has contributed to stability in farm incomes from chicken production.

Currently, Canada is able to control its supply through production controls administered by the Canadian Chicken Marketing Agency (CCMA) and through import controls under Article XI (2)(c)(i) of the General Agreement on Tariffs and Trade (GATT); the new GATT will require modifications to the system, effective July 1995. The CCMA sets domestic production quotas for each production period as recommended by its Supply Management Committee (SMC); the voting membership of the SMC is made up of four primary processors and one representative each from independent further processing, fast food, retailing and consumer sectors. The Committee's recommendations on production quota take into account forecasts of domestic requirements, import levels and target prices for live broilers. After the national domestic

production quota is approved by the National Farm Products Council, the Agency allocates marketing quota to member provincial marketing boards based on agreed criteria (see Appendix C). Provincial production levels are determined by a federal-provincial agreement which precludes dramatic changes in provincial shares of the national quota.

Provincial farm-gate prices for broilers are largely based on provincial costs of production and provincial market conditions. In practice, Ontario is the price leader; excluding B.C., other provinces generally follow Ontario prices.

United States

U.S. growers also receive stable, albeit lower, payments for chicken production under grower-integrator contracts. The U.S. government's social programs (Food Stamp and School Lunch Programs) have helped to stabilize wholesale prices through increased demand and exports have been supported through subsidies under the Export Enhancement Program. In 1987, 25% of U.S. chicken exports were covered by EEP. Most of these sales were to the Middle East. Since then, exports to the lucrative Middle East market have virtually ceased and in the early 1990s, only 4-5% of U.S. chicken exports were supported by EEP. These demand enhancing programs may reduce market risk for the integrator.

The broiler industry in the U.S., unlike most other U.S. agricultural sectors, works under a free enterprise system that is characterized by the presence of large corporations with extensive vertical integration of production, processing and marketing functions.

3.2 Basic Factor Conditions

Basic factors of production are those that are passively inherited by a nation or created through moderate investment. Examples are natural resources, climate, and unskilled or semi-skilled labour.

3.2.1 Land

Broilers are grown in barns and require limited land area. Broiler farms tend to exist in clusters. Clusters are tighter in the U.S. where large processing plants can attract the required number of grow-out operations to locate within a 20-25 mile radius. Regional concentration is also more prominent in the U.S. relative to Canada as broiler processing and production have gradually moved from the northeastern, central and midwestern regions to the southeast where farm land tends to be lower priced and waste disposal less costly. (Rising grain transportation costs are motivating some firms to relocate processing plants in the U.S. grain belt, i.e., midwest U.S.A.)

Production and processing concentration, such as in the U.S., requires consideration of the land required to dispose of chicken manure and processing waste. In Canada, manure disposal is not as serious an issue as farms are more dispersed than in the U.S., except perhaps in south-western Ontario, Nova Scotia and the Lower Fraser Valley, B.C.

3.2.2 Human Resources

The set of managerial skills required to run a Canadian poultry farm operation are different from those required on a U.S. farm. The U.S. grower essentially runs his operation according to directions received from the integrator's serviceman. The serviceman sees each flock assigned to him at least once a week and is on call for advice at all other times; large integrators also employ researchers to work on their "research farms" and findings on new products and methods flow promptly from the research farm to the producer through the poultry serviceman. Gordon Sawyer writes in his book, The Agribusiness Poultry Industry:

"Without the poultry serviceman, it is doubtful the contract system of broiler production would have ever worked; and without the contract system, it is doubtful the poultry industry could have moved on into the industrial pattern called agribusiness."

By comparison, in Canada, feed mills and hatcheries provide growers advice but do not exercise the same level of control over operations as in the U.S.

In terms of basic and technical skills, Canadian hired labour generally has more formal education than its U.S. counterpart. This is true for the farm as well as the processing levels and partly accounts for differences in wage rates in Canada and the U.S.

3.2.3 Climate

The colder Canadian climate translates into higher housing and fuel costs in broiler operations. On the positive side, the long and severe winters in Canada kill harmful bacteria and insects and reduce the need for chemicals to control disease.

A 1992 study which compared production costs on representative farms in Ontario, Quebec, British Columbia and Delmarva (Delaware, Maryland and Virginia) showed that energy costs (per kilogram of live weight) on Canadian farms can be 2.5 to 3 times as much as they are on farms in the Delmarva region (see comparison in Table 4.3). Expenditures on fuel, however, account for a small percentage (4-5% in Canada and 2-3% in the U.S.) of total broiler production costs.

The study also showed that broiler housing costs (includes grading, plumbing, well/pressure system, electrical, shed, concrete manure pad, and chicken barns) in Canada were about twice as high as those in southeastern U.S. Because of the severe Canadian winters, poultry barns are built to prevent heat loss which raises construction costs. However, Canadian houses are generally well insulated for summer production, whereas severe heat frequently causes serious growth and production problems in the warmer climates of southern U.S.

3.3 Primary Production Structure

In Canada, broilers are produced in every province. Provincial production in any period is based largely on their shares of national production prior to the establishment of the supply management system. "Over base quota" allocation takes into account such factors as comparative advantage in production and marketing and changes in provincial consumption. Broiler production is concentrated in Ontario (33.6% of national production in 1992) and in Quebec (29.7% in 1992). The Atlantic Provinces accounted for 10.8% of the total Canadian broiler production in 1992.

In the U.S., production and processing is highly concentrated. Nine of the top ten producing states are in the southern and eastern United States; California is the only state of the top ten that is outside that region. In 1992, the top ten states produced 81% of the total U.S. production. The three largest producing states are Arkansas, Georgia and Alabama, accounting for 36.8% of the total U.S. production in 1992.

The concentrated location of chicken production in the south-east U.S. is encouraged by low contracting costs for live birds due to few alternative uses for land and labour and a warmer climate which reduces overall housing costs for the broilers. These factors more than offset the higher cost of feed, much of which has to be shipped from the midwest region by rail, truck or barge. Processing labour wages are also lower because of easier access to workers from Mexico.

3.3.1 Census: Number and Size of Farms

Based on the data in Table 3.3 and ignoring the non-commercial producers in the 1-1,999 size category, the following distributions result. Canada has proportionally more small producers (less than 60,000 birds) than does the U.S. (34% vs. 12%). The data show a slightly higher concentration of production in larger farms in Canada than in the U.S. but a higher average farm size in the U.S. industry.

<u>Farm Size</u>	<u>U.S.</u>	<u>Canada</u>
	Percent	
2,000 - 15,999	2.8	15.0
16,000 - 29,999	1.9	6.1
30,000 - 59,999	7.3	12.9
60,000 - 99,999	14.9	12.2
100,000 - 199,999	32.1	27.5
200,000 - 499,999	35.4	23.4
500,000 +	5.8	2.9

% of Farms	% of Broilers	
	<u>U.S.</u>	<u>Canada</u>
Top 5%	21.15	19.28
Top 25%	50.12	58.73
Top 50%	77.62	84.26
Top 75%	93.65	97.10

**TABLE 3.3 FARMS SELLING BROILERS AND BROILERS SOLD BY SIZE GROUPS
U.S. AND CANADA**

Size Category	U.S. 1987				Canada 1991			
			Distribution				Distribution	
	Farms	Broiler	Farms	Broiler	Farms	Broiler	Farms	Broiler
	Number	1,000	Percent		Number	1,000	Percent	
1-1,999	7,876	1,226	28.5	0.03	15,298	1,600	85.4	0.4
2,000-15,999	544	4,277	1.9	0.10	390	3,052	2.2	0.8
16,000-29,999	374	8,469	1.3	0.2	160	3,500	0.9	0.9
30,000 or more	18,851	4,348,002	68.1	99.7	2,456	368,342	11.5	97.9
30,000-59,999	1,442	65,066	5.2	1.5	335	14,156	1.9	3.8
60,000-99,999	2,936	226,558	10.6	5.2	317	24,229	1.8	6.4
100,000 or more	14,473	4,056,378	52.3	93.0	1,404	329,957	7.8	87.7
100,000-199,999	6,344	929,169	22.9	21.3	717	99,662	4.0	26.4
200,000-499,999	6,992	2,066,777	25.3	47.4	611	173,381	3.4	46.1
500,000 or more	1,137	1,060,432	4.1	24.3	76	56,914	0.4	15.1
TOTAL	27,645	4,361,976	100.0	100.0	17,904	376,494	100.0	100.0

¹ Includes broilers, roasters, cornish and stewing hens.

Source: U.S. Department of Commerce, Bureau of Census, Census of Agriculture, 1987.
Statistics Canada, Census of Agriculture, 1991.

3.3.2 CCMA: Quota Holders

In Canada, only producers holding production quota permits are allowed to produce chicken for commercial marketing. Some provinces have an upper limit on the quota held by individual producers which is low relative to average broiler production in the U.S. It should be noted that the maximum quota limit is the highest in Alberta, enabling the largest farms to produce 1.25% of provincial quota base. Curiously, Alberta has one of the lowest average quotas among all provinces. In most other provinces, individual quota limits fall between 0.6 million and 1.2 million kilograms per cycle (Table 3.4). Some Canadian farms produce more than the provincial limit because they were grandfathered into the supply management system or because they operate as cooperatives, e.g., the Lilydale operation at Spring Brook produces 1.1 million broilers a year (for provincial limits on quotas, see Appendix B).

TABLE 3.4 QUOTA ALLOCATION (ANNUAL) AND REGISTERED GROWERS IN 1992, BY PROVINCE

	Quota	Distribution	Growers	Distribution	Average quota	Upper Limit ¹
	th. kg (eviscerated)	%	Number	%	th. kg	th. kg
BC	70,432	12.66	256	10.13	275	1158
Alberta	45,308	8.12	246	9.74	184	1752
Sask.	14,847	2.69	73	2.89	203	426
Manitoba	21,185	3.81	137	5.42	155	600
Ontario	192,651	34.63	975	38.60	198	396
Quebec	167,837	30.16	700	27.71	240	1110
NB	14,997	2.70	40	1.58	375	1200
NS	19,500	3.51	72	2.85	271	624
PEI	2,224	0.40	7	0.28	318	678
Nfld.	7,311	1.33	20	0.79	366	636
Canada	556,294	100.0	2,526	100.0	220	

¹ Approximate maximum; quota holders producing more than the maximum were "grandfathered" into the system.

Source: Canadian Chicken Marketing Agency, Provincial Chicken Marketing Boards.

In addition to imposing upper limits on individual quota holdings, most provincial marketing boards, until recently, discouraged consolidation by their restrictive quota transfer policies, such as requiring that quota sales include transfer of production facilities.

Cooperative arrangements have worked well in Nova Scotia, Quebec, Alberta and British Columbia. Volaille Unival, the poultry division of Coopérative fédérée du Québec, had 1991 sales of \$326 million, down 2.1% from the previous year even though sales of further processed products showed a slight increase. Lilydale Cooperative Limited is the largest poultry processor in western Canada and has 1,400 employees. It has six divisions: processing, hatchery, further processing, farm, table egg, and equipment manufacturing. Lilydale ships product across Canada and to the U.S. and Japan.

3.4 Processing Structure

3.4.1 Canada

According to Agriculture Canada, in 1992, there were 69 federally-inspected and 36 provincially-inspected plants whose primary business (included killing, dressing, packing or canning) was poultry; the respective numbers for 1991 were 75 and 38. The majority of plants were located in Ontario (45 plants or 43% of total in Canada) and Quebec (23 plants or 22% share). The distribution of the remainder was as follows: 6 in the Atlantic Provinces (all federally inspected),

20 in the Prairies, and 11 in B.C. The majority of Canadian plants operate on a non-integrated basis. Downstream vertically integrated plants are estimated to account for one-third of the Canadian industry's processing activities; the remaining two-thirds is divided about equally between non-integrated primary processors and further processors.

Both the level of Canadian industry concentration and the degree of foreign ownership and control have increased in recent years. The acquisition of The Poultry Company as part of the purchase of Maple Leaf Mills by Hillsgate Holdings of the U.K. in 1987 was followed by Maple Leaf's amalgamation with Canada Packers under Hillsgate control effective 1991. As a consequence of these developments, Hillsgate plants (Ontario and Nova Scotia) currently account for around 20% of Canadian poultry products production. In addition, Tyson Canada Inc., a subsidiary of Tyson U.S.A., was acquired by the Coopérative fédérée de Québec in 1991. Tyson Canada Inc. was a poultry breeding, slaughtering and processing operation. The poultry division of the Coopérative fédérée currently includes seven slaughter houses, three processing plants, 39 poultry farms and a feed sales office.

Other major firms in the Canadian poultry processing industry include Maple Leaf Foods Inc., Cuddy Food Products and Horizon Poultry Products Inc. in Ontario; Coop de Dorchester and SCAR St-Damase in Quebec; ACA Cooperative Ltd. in the Maritimes; Lilydale Cooperative in Alberta; Sunrise Poultry Processors Ltd. in B.C.; and Plains Poultry Ltd. in Saskatchewan.

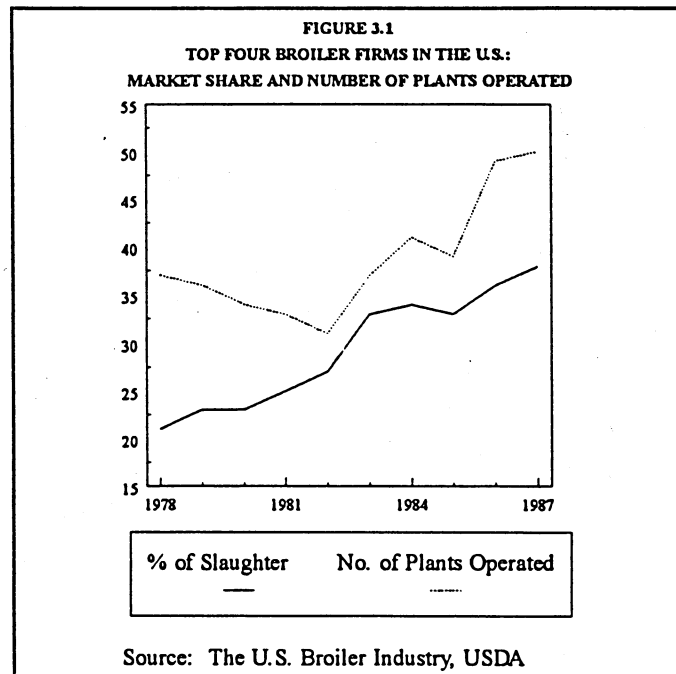
3.4.2 United States

Primary Processing

In 1992, 56 poultry processing companies slaughtered, on average, 131.28 million broilers a week in 175 processing plants. These firms represented about 99% of the U.S. poultry processing industry.

Level of concentration has increased over the years. In 1982 the four largest firms operated 31 plants that slaughtered 27% of the total number of birds (Figure 3.1). By 1992, the number of plants operated by the top four firms had increased to 88 and market share to over 40%. Of the 56 firms surveyed, 33 slaughtered more than one million birds a week (Tyson's weekly slaughter averaged 25 million broilers in 1992).

Slaughter capacity is concentrated geographically. Although slaughter plants are located throughout the major broiler production areas, the larger ones are concentrated in south-central and south Atlantic areas.



Further Processing

In the U.S., multi-plant processors tend to do most of their further processing in specialized plants, although they also have cutting operations in nearly all slaughtering plants. Independent further processors generally do not slaughter broilers but buy dressed chicken or chicken meat from another processor. They also process meats other than chicken providing a wider product line, reaching more outlets, and making fuller use of distribution services.

Because further processed products are often frozen and/or fully cooked, they are generally less perishable and can be distributed nationally more economically than can cut-up or whole chicken e.g., Tyson's processing plants are located in several states but distribution is coordinated by the head office in Arkansas. Broiler integrators, accounting for over half of the further processing activity, often locate the further processing plant close to one of their major slaughter plants in order to gain both a cost- and time-saving advantage. As a result, further processing plants are also concentrated in the south central and south eastern regions.

In the U.S., concentration in broiler processing began a slow rise in the late 1970s and the four-firm concentration ratio rose above 40% in 1989. Even with the recent increase, concentration in broilers is significantly less than is found in U.S. food manufacturing industries, generally. The rise of concentration in the 1980s was mainly the result of mergers among leading firms e.g., Tyson Foods is the number one broiler processor in the U.S. with 44 plants (90% of its plants were acquired), accounting for 18% of the total U.S. production (ready-to-cook) in 1992. ConAgra owned 30 poultry processing plants in 1992 with 8.7% of the production share. Gold Kist, an agricultural cooperative, made no acquisitions but grew internally and currently holds third position with 7.9% of the market share (Broiler Industry, December 1992).

4.0 DETERMINANTS OF COMPETITIVENESS

This chapter compares Canadian and U.S. broiler industries with respect to the many factors that affect their ability to compete in domestic and international markets.

4.1 Product and Cost Competitiveness

Competitiveness is achieved by lowering costs/prices and/or by-product differentiation.

Cost is generally presumed to be the primary determinant of competitiveness, particularly for undifferentiated products sold in similarly structured markets. Product differentiation is a marketing strategy which can reduce the importance of price in consumer decisions to purchase specific products; its significance increases as the product moves up the value chain. Product differentiation in further processed products is used extensively by U.S. firms for marketing chicken but to a lesser extent in Canada likely because of the much smaller market and uncertain availability of raw product. This section compares costs in Canada and the U.S. at the farm and processing levels. Differences in market structures and the accompanying impact on prices of inputs and final products at the processing and distribution levels are also discussed.

4.1.1 Farm Production Costs

In Canada, cost of production is calculated monthly by the CCMA using a cost of production (COP) formula for each province which is based on a periodic COP survey and methodology review. (The formula combines input price monitoring and input price indexing.) This is remitted to provincial marketing boards who may use it to negotiate prices with processors. Processing margins are not included in the COP formula, as they are in the dairy industry. Production technology is assumed to remain constant between surveys. Currently, cost of production calculations are based on a 1991 survey of chicken farms.

For the U.S., however, national cost of production surveys have not been carried out since 1972 as changes in the industry's structure and methods of marketing have, for all practical purposes, eliminated farm sales. Gempesaw et al. (1992) constructed costs of production on representative U.S. farms and compared these with costs of production on representative Canadian farms. The information presented below was extracted from their unpublished paper "The Competitiveness of U.S. and Canadian Broiler Growout Enterprises".

Characteristics of Representative Farms

Gempesaw collected data for the U.S. from various sources; personal interviews were conducted with broiler growers, input-supplying companies, bank loan officers, and poultry extension agents. Four representative farms were constructed for Delmarva (Delaware, Maryland, and Virginia), Alabama, Arkansas, and Georgia. These four broiler producing areas account for over half of total U.S. broiler production.

Production and financial characteristics of the four representative U.S. farms are given in Table 4.1. All farms were assumed to have three negative-pressure type broiler houses with six flocks per year and ten acres of land. The representative farms began their operations with \$5,000 in cash and were required to maintain \$2,500 in cash reserves. Due to higher cost of land, the Delmarva farm's total assets were substantially higher than the other U.S. regional representative farms. In addition, the Delmarva grower produced a heavier bird than the other regional growers in view of Delmarva's retail market orientation. Delmarva farm costs are compared with those in three Canadian provinces - Ontario, Quebec and British Columbia.

TABLE 4.1 PRODUCTION AND FINANCIAL CHARACTERISTICS OF REPRESENTATIVE BROILER FARMS IN DELMARVA, ALABAMA, GEORGIA AND ARKANSAS - 1990

Characteristics	Delmarva	Alabama	Georgia	Arkansas
No. of Houses	3.0	3.0	3.0	3.0
Ave. Capacity/House (000 birds)	24.7	23.3	23.7	23.3
Farmland Acres Owned	10.0	10.0	10.0	10.0
Number of Flocks/Year	6.0	6.0	6.0	6.0
Debt/Asset Ratio	0.50	0.50	0.50	0.50
Total Assets (\$000 U.S)	377.9	256.8	341.2	251.9
Cash Reserves (\$000 U.S)	5.0	5.0	5.0	5.0
Age of Operator	45.0	45.0	45.0	45.0
Off-Farm Income (\$000 U.S)	20.0	20.0	20.0	20.0
Wage Rate (U.S. \$/hour)	4.50	4.50	4.50	4.50
Ave. Mortality Rate (%)	3.0	3.0	3.0	3.0
Ave. Initial Bird Prices	158.0*	40.0**	38.0**	40.0**
Ave. Bird Weight (kg)	2.2	1.8	2.2	1.8
Interest Rates:				
Long Term (%)	10.0	10.0	10.0	10.0
Intermediate Term (%)	9.0	9.0	9.0	9.0
Operating Loans (%)	8.0	8.0	8.0	8.0

* Per thousand birds (U.S.\$)

** Per thousand pounds (U.S.\$)

Source: Gempesaw et al, The Competitiveness of U.S. and Canadian Broiler Growout Enterprises, unpublished paper.

TABLE 4.2 PRODUCTION AND FINANCIAL CHARACTERISTICS OF REPRESENTATIVE BROILER FARMS IN DELMARVA, ONTARIO, QUEBEC AND B.C. - 1990

Characteristics	Delmarva	Ontario	Quebec	B.C.
No. of Houses	3.0	2.0	2.0	2.0
Ave. Capacity/House (000 birds)	24.7	18.0	18.0	18.0
Farmland Acres Owned	10.0	10.0	10.0	10.0
Number of Flocks/Year	6.0	6.0	6.0	6.0
Debt/Asset Ratio	0.50	0.50	0.50	0.50
Total Assets (\$000 Can.)	468.6	670.2	677.6	669.9
Cash Reserves (\$000 Can.)	6.2	5.0	5.0	5.0
Age of Operator	45.0	45.0	45.0	45.0
Off-Farm Income (\$000 Can.)	24.8	20.0	20.0	20.0
Wage Rate (\$Can./hour)	5.58	11.30	11.30	11.30
Ave. Mortality Rate (%)	3.0	5.8	5.5	5.4
Ave. Initial Bird Prices (Can.¢/kg)	90.0	116.0	116.0	114.0
Ave. Bird Weight (kg)	2.2	2.0	2.1	1.9
Interest Rates:				
Long Term (%)	10.0	10.0	10.0	10.0
Inter. Term	9.0	9.0	9.0	9.0
Operating Loans	8.0	8.0	8.0	8.0

Source: Gempesaw et al, The Competitiveness of U.S. and Canadian Broiler Growout Enterprises, unpublished paper.

The production and financial characteristics for three representative Canadian broiler farms (Ontario, Quebec and British Columbia) are presented in Table 4.2. These three provinces account for over 75% of total broiler production in Canada. The representative farms were assumed to have two broiler houses with an average capacity of 18,000 birds per house. The farms operated on a ten acre farmland with an initial base of six placements per year. This farm would fall into the \$250,000 to \$500,000 revenue class according to taxation data base. In 1990, this revenue class represented 27% of the total population of broiler farms. The average value of total assets for the representative Canadian farms was around \$670,000. The Canadian farms were assumed to produce birds with an average weight which was similar to the production weights in the U.S. region. The estimated variable costs were based on provincial cost of production updates provided by the Canadian Chicken Marketing Agency.

Production Costs on Representative Farms

Inasmuch as there are significant differences in industry structure (e.g., U.S. growers do not pay for feed, chick costs, catching, and part of energy costs), the comparison was undertaken using the Canadian broiler industry structure. Costs which are normally not borne by the U.S. grower under the vertically integrated system were estimated indirectly from secondary sources using, for example, prevailing feed prices and feed conversion rates. Personal interviews were also conducted with selected integrators in Delmarva to verify the estimated production costs. To facilitate the cost comparison, an exchange rate of one U.S. dollar to 1.24 Canadian dollars was assumed.

Fixed costs for a Delmarva representative farm are about \$150,000 less than those on representative Canadian farms (Table 4.3). Feed and chicks are the most important input costs in broiler production in Canada, accounting for 75-80% of the total variable cost. Of the remaining inputs, labour, energy and catching costs have relatively high weights in production costs. Overall, the total variable costs of Canadian representative farms were at least 30 cents per kg higher than those of the Delmarva farm. About half of this cost difference was accounted for by chick costs. Feed, energy and labour costs were also important contributors to the cost difference.

TABLE 4.3 COMPARISON OF PRODUCTION COSTS: CANADIAN AND U.S. REPRESENTATIVE FARMS - 1992

Cost Item	Ontario	Quebec	B.C.	Delmarva
Fixed Costs (\$ Can per house)				
Broiler Housing ¹	199,412.50	208,800.00	202,000.00	93,000.00
Barn/Yard Equipment ²	73,989.00	68,437.50	70,000.00	43,400.00
Tractors/Truck/Others	44,177.00	44,050.00	45,575.00	29,760.00
Total Fixed Costs	317,578.50	321,287.50	317,575.00	166,160.00
Variable Costs (¢ Can per kg)				
Feed Cost	46.49 (46.3%)	59.18 (55.8%)	57.15 (55.7%)	43.32(61.9%)
Chick Cost	27.72 (27.6%)	24.54 (23.1%)	24.73 (24.1%)	9.95 (14.2%)
Labour Cost	13.11 (13.0%)	12.13 (11.4%)	11.44 (11.1%)	9.96 (14.3%)
Repairs/Maintenance Cost	2.91 (2.9%)	2.17 (2.0%)	1.51 (1.5%)	0.76 (1.1%)
Energy Cost	5.28 (5.3%)	4.62 (4.4%)	4.52 (4.4%)	1.79 (2.6%)
Catching Cost	2.47 (2.5%)	1.62 (1.5%)	1.53 (1.5%)	3.06 (4.1%)
Miscellaneous Cost	2.36 (2.4%)	1.79 (1.8%)	1.68 (1.7%)	1.06 (1.5%)
Total Variable Costs	100.34	106.05	102.56	69.90

¹ Broiler housing costs include grading, plumbing, well/pressure system, electrical, shed, concrete, manure pad, and chicken barns which comprise almost two-thirds of the total housing costs.

² Barn/yard equipment include ventilation system, heating system, feeding system, water system, and other miscellaneous equipment.

Source of Canadian Data: Canadian Chicken Marketing Agency (Model Farm Costing for New Construction) - 1991; and Cost of Production Updates - September 1992.

Source of Delmarva Data: Updated data from Gempeasaw and Bhargava - 1990.

Feed costs were significantly lower in Ontario than in Quebec and B.C. This cost advantage for Ontario relative to Quebec and B.C. more than offset its cost disadvantage in all other variable inputs. (Feed costs may be an even greater competitiveness advantage for the Prairie Provinces than for Ontario.)

TABLE 4.4 U.S. GROW-OUT COST AND PERFORMANCE REPORT: MAY 1990 THROUGH AUGUST 1990

	U.S. ¢/kg	Can \$ ¹
Feed costs *	40.94	50.77
Medication	0.16	0.20
Vaccine	0.22	0.27
Vaccination/debeaking labour with benefits	0.22	0.27
Housing and labour		
Base (rate to grower)	8.14	10.09
Litter	0.60	0.74
Fuel	0.29	0.36
Total	8.73	10.83
Service and service supervision	0.42	0.52
Other	0.09	0.11
Sub-total	50.73	62.91
Condemnation cost	1.10	1.36
TOTAL GROW-OUT COST	51.83	64.27
Chick costs	8.27	10.25
Live haul	3.42	4.24
TOTAL LIVE COST	63.52	78.76
* with adjustment to eliminate any transfer price in the cost of poultry by-product meal		

PERFORMANCE FACTORS

Mortality (%)	6.1
Live weight (kg)	2.25
Age (days)	52.1
Feed costs (U.S. \$/t, delivered)	193.09
(Canadian \$)	\$239.43
Feed Conversion Ratio (lbs. of feed/lb. of gain)	2.114

¹ Assumes \$1.00 U.S. = \$1.24 Canadian.

Source: Agrimetrix Associates.

A report by Agrimetrix Associates also indicates production costs (Table 4.4) similar to those shown by the Gempesaw et al. study. These may be compared with Ontario chicken costs of production supplied by the CCMA (Table 4.5).

TABLE 4.5 ONTARIO CHICKEN COST OF PRODUCTION, AVERAGE FOR MAY TO AUGUST 1990

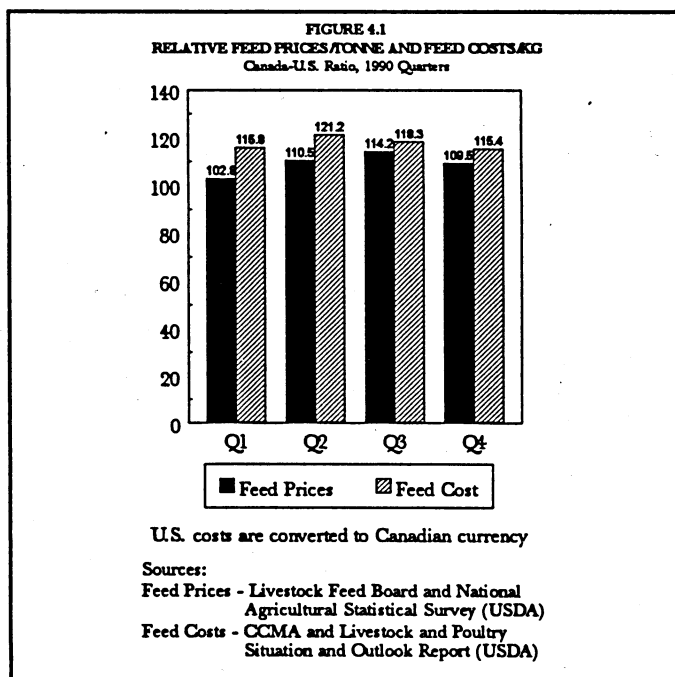
	Cost in Cdn ¢/kg
Costs	
Feed	50.14
Chick	28.00
Labour (operator & hired)	12.08
Production Overhead	
Repair and maintenance	2.79
Energy	4.75
Other	2.37
Business Overhead	3.16
Depreciation	4.95
Interest	12.79
Risk (flock destruction)	0.24
Provincial levy	0.79
Agency levy	0.50
TOTAL COST	125.02
PERFORMANCE INDICATORS	
Average feed cost (\$/tonne)	\$217.58
Feed conversion ratio (lbs. of feed/lb. of gain)	2.06
Chick price	49.45

Source: Canadian Chicken Marketing Agency.

Feed Costs

Corn and soybean meal are the major components of broiler feed in central Canada. There is considerable variability in the Chatham - Chicago corn basis with Ontario prices being above or below those in the U.S. in different time periods. Feed costs in other parts of Canada are considerably higher than in the U.S. Lower margins in the U.S. feed manufacturing industry related to the extensive network of vertically integrated feed manufacturers in the south-east may be one factor contributing to this price difference.

Feed prices for the U.S include a downward adjustment to ration costs to reflect the use of poultry by-product meal in the feed formula; the integrator generally owns the processing plant (source of by-product) and the feed mill (user of by-products). Canadian feed prices reported by the Livestock Feed Board are based on a formula that includes only corn and soybeans. In Canada, poultry by-products are a cost to the feed manufacturer/grower and a revenue for the processor. These differences should not impact on the wholesale price of chicken and hence its competitiveness vis-à-vis imports. (Figure 4.1.)



The slightly better (lower) feed conversion rates in Canada may reflect the greater control of growing environment in Canadian grow-out houses. In Canada, provincial averages for feed conversion ratios range from 1.88 in B.C. to 2.13 in P.E.I.

Chick Costs

Chick costs in Canada are 2.5 to 3 times higher than those in the U.S. Canadian chick costs are transaction prices reflecting the cost of production formula in a broiler-hatching-egg supply management system and the operating and fixed costs of hatcheries as well as their profit margins. Because of the integrated nature of the U.S. industry, chick costs presented in the table may reflect the costs of producing hatching eggs on contract and the operating costs of hatcheries i.e., they may not include a profit margin. These profits may be added on to the processing margin and will be reflected in wholesale prices.

Labour Costs

The cost of production study by the CCMA based on 1990 data included labour cost analysis based on a model farm. As a result, an estimate was obtained of the hours and type of labour required to complete all tasks involved in the efficient operation of the model farm. A total of 3,000 hours of labour were determined with a mix including:

- 670 hours for Management, or 1.68 hours per 1,000 kg
- 739 hours for Skilled labour, or 1.83 hours per 1,000 kg
- 1591 hours for General labour, or 3.98 hours per 1,000 kg.

Provincial wage rates in the COP study ranged between \$10.22 and \$16.33 for skilled labour; they were based on Statistics Canada's industrial average wage rate. General labour wages were assumed to be 70% of the skilled labour wages. Average labour cost ranged from 10.01 cents per kg in P.E.I. to 12.84 cents per kg in British Columbia.

A 1986 survey of broiler operations carried out in Georgia indicated that average hired labour costs for an integrated company-owned broiler operation ranged between 2.91 and 3.33 U.S.cents/kg. Using a U.S./Canada exchange rate of 1.37 (peaked in 1986) this range translates to 3.99 to 4.56 cents Canadian. The Georgia cost estimates were based on salary: residence and utilities for two people; average wages (for general and skilled labour) estimated at \$7.50 U.S./hour; and average labour performance rates of 6.6 hours per 1,000 birds or approximately 3.77 hours per 1,000 kg.

The National Farm Products Council recently commissioned Deloitte and Touche to study cost structure in broiler, turkey and egg production, with particular emphasis on labour costs.

The difference in labour costs between Canada and the U.S. may reflect some economies of scale as well as differences in the range of activities performed. In the U.S., the integrator assumes several of the management functions normally carried out by farm owner/operator in Canada and hired labour is generally unskilled.

Given the modest weight of labour costs in broiler production (less than 15%), labour may raise Canadian cost of producing broilers 4 to 5% above those for the U.S. Minimum wage laws in the provinces will continue to be an important factor in labour costs in the coming years.

Energy Costs

With respect to energy, Ontario broiler producers are at a cost disadvantage relative to their U.S. counterparts. This disadvantage is attributable to the harsher climate in Ontario so more fuel is used per kilogram of chicken output. Climate is less of a disadvantage in British Columbia where over 80% of the producers are located in the Fraser Valley.

Interest Costs

Interest rates have been higher in Canada than in the U.S. with the differential in the prime business loan rate (14.75% in Canada and 10% in the U.S.) peaking in the second quarter of 1990 at 4.75 percentage points. Considering the small contribution that interest costs make to total production costs, the current difference in the prime rate of less than one-half percentage point has virtually no impact on competitiveness of the sector.

4.1.2 Processing Costs

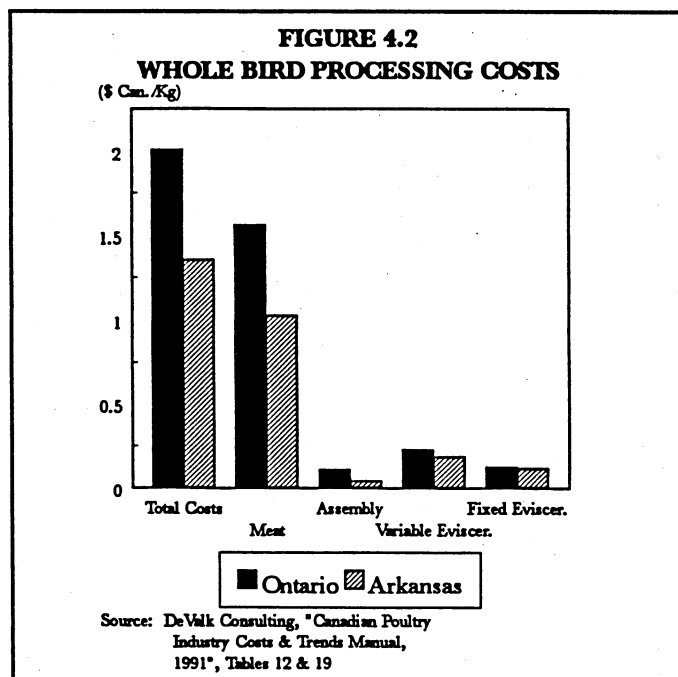
Processing cost comparisons are based on two studies: (i) Canadian Poultry Costs and Trends Manual by DeValk Consulting Inc.; and (ii) Comparison of Canadian and U.S. Broiler and Turkey Industries by Agrimetrix Associates.

4.1.2.1 DeValK Consulting Inc.

(a) Primary Products

This section draws heavily on information provided by DeValK Consulting Inc. in their Canadian Poultry Industry Costs and Trends Manual (1992)¹ where processing costs are organized on a product flow basis, as would be the case for an integrated U.S. firm. The study includes cost estimates for "flagship" primary as well as further processed products in efficient plants in 1991. The consultants obtained cost data from industry sources, on-site visits and interviews and model processing plants developed to make international cost comparisons.

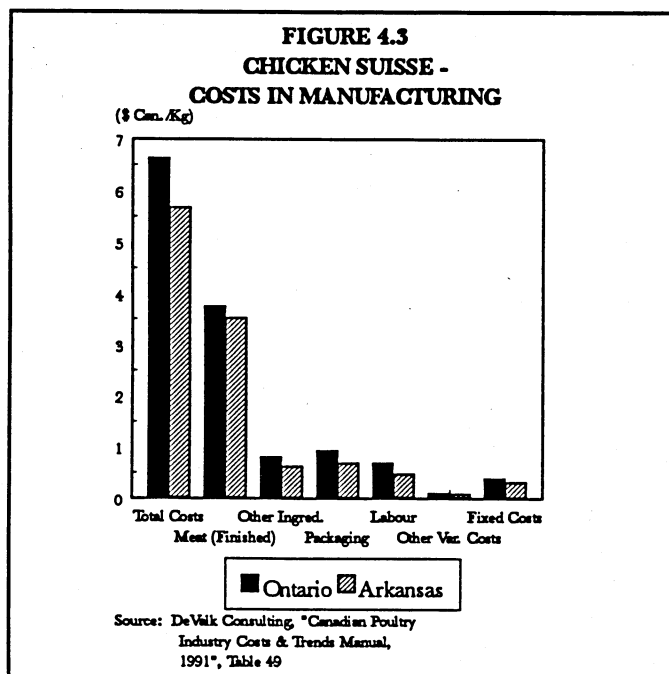
Ontario-Arkansas cost comparisons for whole broilers, chicken Suisse and sweet and sour chicken dinner are discussed below. The DeValK report estimates that in 1991, eviscerated broilers from the Ontario plant cost \$0.67/kg more than those from the Arkansas plant. Higher live bird costs as well as eviscerating costs (fixed and variable) were the main contributors to the cost difference (Figure 4.2).



Although manufacturing and raw material costs were higher in Ontario than in the U.S. for all chicken products, the combined cost of tariffs, transportation costs, exchange rate, importation costs and importer fees were sufficient to raise the price of U.S.-landed whole birds above the wholesale price prevailing in the Ontario market. For example, in 1991, importers were able to purchase whole fresh chicken on the U.S. spot market at an average price of \$1.36 Can. per kilogram. The landed price in Ontario for fresh, whole U.S. chicken is estimated to be \$2.44/kg which is well above the estimated cost an efficient Ontario processor would have incurred eviscerating whole broilers. For the more highly processed products, such as boneless chicken, the landed price of U.S. product into the Ontario market was estimated to be lower than the price needed by an efficient Ontario plant to cover costs and earn a return equal to U.S. plants. The increase in imports of cut-up chicken parts, boneless meat and further processed products in recent years supports these cost comparisons and the ability of importers to earn a higher margin.

¹ Available from DeValK Consulting Inc.: Telephone 613-739-7850, Facsimile 613-733-9501.

(b) Further Processed Products

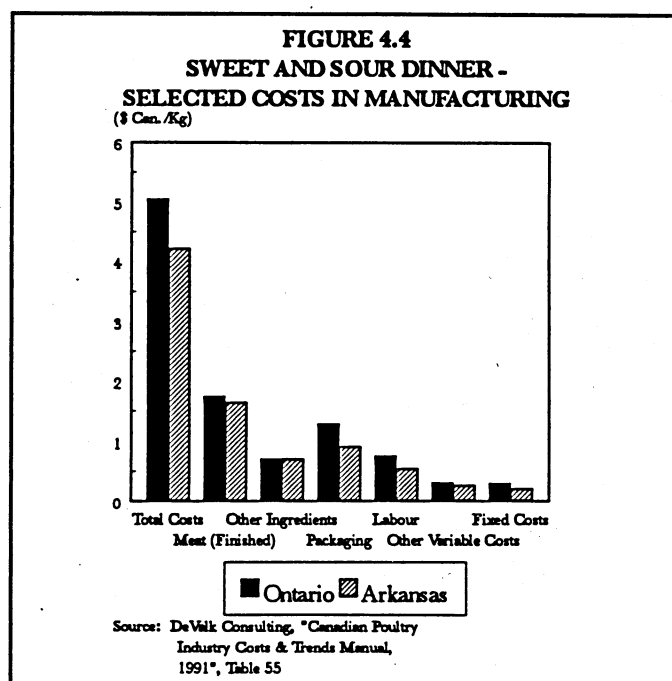


According to DeValk Consulting Inc., independent processors are the key manufacturers of further processed products in both the U.S. and Canada. Chicken Suisse and sweet and sour chicken dinners are two non-ICL specialized products manufactured primarily by independent further processors in both Canada and the United States. (Non-ICL products are value-added poultry products that are not on the Import Control List and can be imported from the United States by only paying the relevant duty.) Costs were developed under the assumption that both the Ontario and Arkansas plants use U.S.-sourced boneless meat as raw material. The cost of manufacturing chicken Suisse was estimated to be 17% higher for the Ontario plant (Figure 4.3). It should be

noted that for a further processor using Ontario-grown boneless meat at \$7.30/kg in 1991, total Ontario plant costs would rise to 25% more than the cost for the Arkansas plant.

The cost comparison for sweet and sour chicken was based on the following composition for the 310 gram dinner: boneless, skinless breast meat, 27%; rice, 36%; vegetables, 30%; and sauce, 7%. Meat, labour and packaging contributed the most to the difference in variable costs. The cost of manufacturing one kilogram of sweet and sour dinner was estimated to be 18% higher in the Ontario plant than in the Arkansas plant (Figure 4.4).

Comparing estimated landed U.S. prices with the Ontario plant's selling prices for these two value-added products shows that in 1991 the Ontario plant is able to cover costs so long as U.S. chicken is sourced but plant margins may be under pressure depending on the level of import competition.



4.1.2.2 Agrimetrics Associates

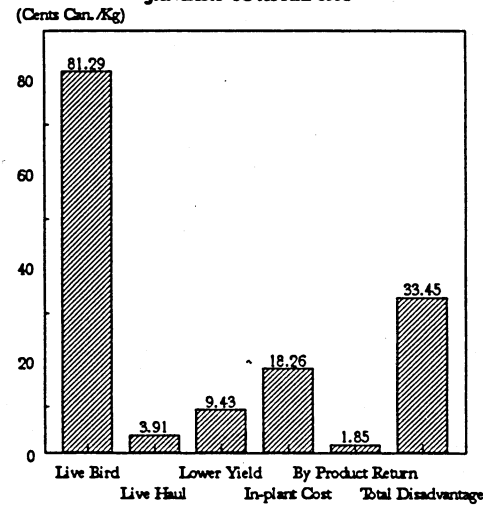
This section is primarily drawn from a presentation made by Agrimetrics Associates² at the October 18, 1993 annual meeting of the Canadian Poultry and Egg Processors Council. The results are based on operating records of 12 Canadian (Ontario and Quebec) and 23 U.S. broiler plants. The cost calculated to place a kilogram of broiler to shipping dock omits corporate overhead cost and interest.

The analysis shows that cost to processors of live birds in the January-April 1993 period was 81 cents higher in Canada than in the U.S. It should be noted, however, that the 81 cent difference is based on single profit centre for integrated firms in the U.S. but includes profits to hatchery, feed mill or broiler grower in the Canadian market. Beyond the farmgate, live haul cost, yield, by-product return, and plant processing costs accounted for 33 cents per kilogram disadvantage (Figure 4.5). Of this amount, 18 cents per kilogram difference is attributable to in-plant costs, primarily due to higher labour costs (Figure 4.6). Selected comparisons in cost factors are presented below.

Volume

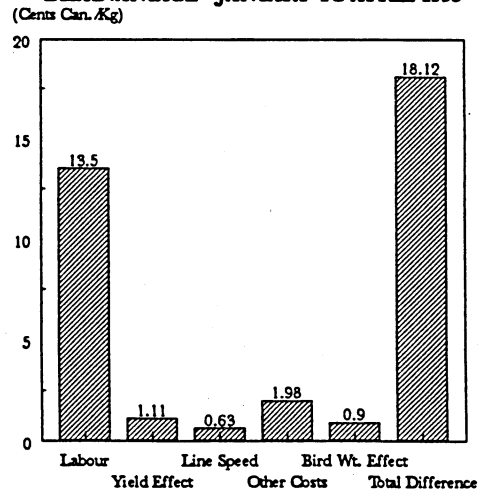
The range in volumes was substantially larger for the Canadian plants than for the U.S. plants. On average, the Canadian plants sold 24 M kg per year while the U.S. plants sold 78 M kg; line speeds averaged 11,021 kg/line hour (40 hour week) in Canada compared with 24,829 kg/hour in the U.S.

FIGURE 4.5
CANADIAN POULTRY PLANTS COST DEVIATION TO U.S. -
JANUARY TO APRIL 1993



Source: Agrimetrics Associates

FIGURE 4.6
BREAKDOWN OF CANADA'S PROCESSING COST
DISADVANTAGE - JANUARY TO APRIL 1993



Source: Agrimetrics Associates

² For more details contact Sidney E. Brown, Telephone 804-748-8176, Facsimile 804-796-9615.

Yields

Yields were slightly lower even after account was taken of the failure to harvest giblets.

Labour Costs

Labour costs were 13.5 cents per kilogram higher in Canada because of higher wage rates (85% higher), fewer (20% fewer) operating hours per week and slower line speeds. Despite the publicly funded health care system in Canada, employee benefit costs were slightly higher in Canada. This was explained by the fact that U.S. broiler processors provide certain basic coverage for employees and none for their families.

Value-Added

The following product mix was noted.

	<u>Canada</u>	<u>U.S.</u>
	percent	
Whole Birds	20.9	9.4
Carry Out Trade	16.0	18.5
Deboned (with frames)	5.1	6.9
Tray Pack	2.0	12.0
Frozen	2.3	9.6

4.2 Factor Conditions

Canada and the U.S. are endowed with labour, land and capital in relatively similar proportions. Therefore, neither country has a comparative advantage over the other in these basic factors of production.

There do, however, exist dissimilarities in the extent to which these factors have been developed and may give one country an edge in the production of high quality and high value-added products at the lowest possible prices.

Land

The poultry industry in Canada has remained concentrated in southern Ontario and the B.C. Fraser Valley where land values are generally higher than in most other regions of Canada. In the U.S., the industry has moved, over the years, to regions with low land and labour costs.

The U.S. industry is continually seeking expansion in areas which offer cost advantages, i.e., the current trend is to expand further south in an effort to reduce waste disposal costs or toward the mid-west to the grain growing areas to take advantage of changing relative costs of land and of lower transportation for feed and finished product.

Labour

In the poultry industry, the number of people employed at the farm level is significantly smaller than at the processing level. In Canada, poultry processors employ about 12,000 Canadians and a further 14,000 are employed in the Other Food Products Industry which produces value-added products from agricultural commodities including chickens.

In the U.S., there were 147.7 thousand workers employed by the poultry slaughtering and processing industries in 1987 of which 131.5 thousand were production workers. The total number of employees had increased 25% from the number in 1982. In 1987, production workers were paid an average of \$6.16 U.S. per hour (Census of Manufacturing Industries).

The availability of skilled labour on poultry farms is not an issue as the owner/operator generally has the technical and management skills required for the job. The complexity of skills required of hired labour is minimal and can be learned easily on the job. In fact, most labour hired to work on poultry farms in the southern U.S. have relatively low levels of literacy and would likely receive minimum wages in alternative employment. Poultry farms in Ontario compete strongly for unskilled labour with the manufacturing industry because of their proximity to urban centres. This raises the price of this factor for work on the farm.

At the processing level, manufacturing labour is required to have a wider range of skills in Canada than in the U.S., as Canadian plants handle more product lines because of the smaller size of the domestic market. Assembly line labour wages are likely to be higher in Canada because of concentration of processing near urban centres where poultry plants compete with other industries and where labour tends to be unionized. Because of higher wages, Canadian processors may tend to invest in capital during periods when the interest rate differential is low, thereby increasing their capital to labour ratio to a level higher than in the U.S.

Research and Technology Transfer

The presence of few, large processing firms in Canada and the relatively limited growth opportunities may mean the Canadian industry is less willing/able to allocate expenditures to research and development. The Canadian broiler production sector relies heavily on government and academics to develop new technology and/or assist in the transfer of technology developed in other countries.

Technology adoption in Canada and the U.S. has progressed at roughly the same pace. The poultry sector may benefit from biotechnological advancement in the coming years. The development and subsequent use of growth regulators is expected to provide leaner meat as well as increased feed efficiency and reduced grow-out time.

Infrastructure

The transportation and communication infrastructure required for business transactions are advanced and similar in the two countries. The wider distribution of farms from input suppliers and processing facilities in Canada and the higher unit prices for these factors raises costs in Canada.

4.3 Demand Conditions

Canada's population is one-tenth the size of that in the U.S. Regional production is more nearly proportionate to population distribution in Canada than is the case in the U.S. Consumer characteristics are similar in the two countries -- except in Quebec where consumers appear to prefer more pork and less chicken than other North Americans.

On average, the North American consumer eats more broiler meat than ever before. Per capita consumption has increased relatively steadily in the last three decades spurred by changing tastes in meat products and the industry's ability to respond to these changes relatively quickly. Consumers are demanding food items that offer variety, are low in cholesterol, easy to prepare and offer good value for money. Industry has responded with precut chicken and an array of further processed items at prices that compare favourably with substitutes.

The food service sector is an increasingly important outlet for chicken sales. Fast food chains, which previously primarily sold beef products, introduced chicken in the 1980s. This sector has complained about difficulty experienced in consistently being able to source raw product in the form and uniformity of size required. Weak market responsiveness of the Canadian system was evident in early 1992 when a deal could not be reached to supply McDonald's with 7 M kg of chicken to test the market for a new product - chicken fajitas.

A comparison of Canada-U.S. trends shows that chicken consumption has increased faster in the U.S. than in Canada (Table 4.6). This is partly explained by the fact that chicken prices relative to those of pork (competitive product) have dropped in the U.S. (Table 4.7) but are increasing in Canada.

TABLE 4.6 PER CAPITA DISAPPEARANCE OF CHICKEN AND PORK (KG)

	1975	1980	1982	1984	1986	1988	1990	1991	1992
<u>Chicken</u>									
Canada	13.2	17.2	17.3	18.3	20.5	22.7	23.0	23.1	23.1
U.S.	16.6	21.3	22.5	24.0	25.7	28.2	31.4	33.7	35.2
Difference	3.6	4.3	5.5	5.9	5.4	5.8	8.8	10.6	12.1
<u>Pork</u>									
Canada	26.1	33.1	29.1	29.2	28.8	29.3	27.5	27.7	29.3

Note: Includes product in both primary processed and further processed state; eviscerated weight equivalent.

Source: Statistics Canada, USDA.

TABLE 4.7 CHICKEN TO PORK PRICE RATIOS, 1975=100

	1975	1980	1982	1984	1986	1988	1990	1991	1992
Canada	100	123	109.8	123.3	108.8	112.2	118.7	119.1	119
U.S.	100	109.2	88.9	104.5	102.0	105.3	98.4	94.8	97

Note: For each country, indices were calculated with 1975 as the base year. They reflect prices for whole eviscerated chicken.

Source: Statistics Canada, USDA.

There has been strong growth in Canadian imports of highly processed products not on the Import Control List (Table 4.8). Growth is expected to continue as U.S. further processors are highly effective in new product development and export marketing. It should be noted that frozen poultry dinners (e.g., pot pies) frequently use fowl meat which is not on the Import Control List; fowl meat imports to Canada have been increasing in recent years for the manufacture of further processed products (pot pies) and soups. Recently, import restrictions on raw product for test marketing of further processed products have been relaxed. This should encourage the manufacture of differentiated products in Canada.

TABLE 4.8 CHICKEN IMPORTS -- ON AND OFF IMPORT CONTROL LIST

Product	1989	1990	Difference	% Change
	On ICL			
Live	6.6	2.9	-3.7	-56
Eviscerated	35.3	42.3	7.0	20
Total Chicken	41.9	45.2	3.3	6
	Off ICL			
Kiev Type (75% boneless)	0.5	1.0	0.5	100
Frozen Prepared Meals	0.3	0.8	0.5	167
Other	2.9	4.5	1.6	55
Total	3.7	6.3	2.6	70

Source: Agriculture Canada, Poultry Market Reports and Meat Hygiene Import Control List.

North American consumers have had a strong preference for fresh chicken over the frozen product. As a result, processors increasingly are shipping ice-packed or chill-packed product directly from the processing plants into consumer channels in order to eliminate storage for this perishable product. Limited reversal of this trend is evidenced in increased sales of frozen products offered at deep discounts by price clubs.

4.4 Supporting and Related Industries

Supporting industries such as breeders and pharmaceutical companies have provided comparable benefits in both countries.

Integration in the U.S. of their processing, hatching and feed milling operations as well as integrator control over grower operations is partly responsible for the efficiencies in the U.S. system that have not been duplicated extensively in the Canadian system. Well developed technical support, university research and extension support are also a part of the large supporting infrastructure in the U.S. "broiler belt".

Related industries are those that are linked to an industry by common technologies, distribution channels, skills and customers. The presence of strong related industries allows for a rapid transfer of information and technology which increases the rate of innovation and upgrading. Industries related to the poultry sector include all food industries, particularly the red meat, frozen food and the processed food industries.

In Canada, the level of integration is lower than in the U.S. The grower is almost always a single proprietor and controls his/her operation from the purchasing of inputs to sale of output.

Although efficiencies in production and processing can be comparable in Canada and the U.S. because of the speed with which technology is adopted in this industry, there is limited coordination in upstream and downstream industries in Canada. Greater power in the hands of the retail and the fast food industries may have resulted in higher retail margins in Canada than in the U.S. Some weakening of this power may occur with the increasing popularity of price clubs.

4.5 Sector Structure, Linkages and Strategies

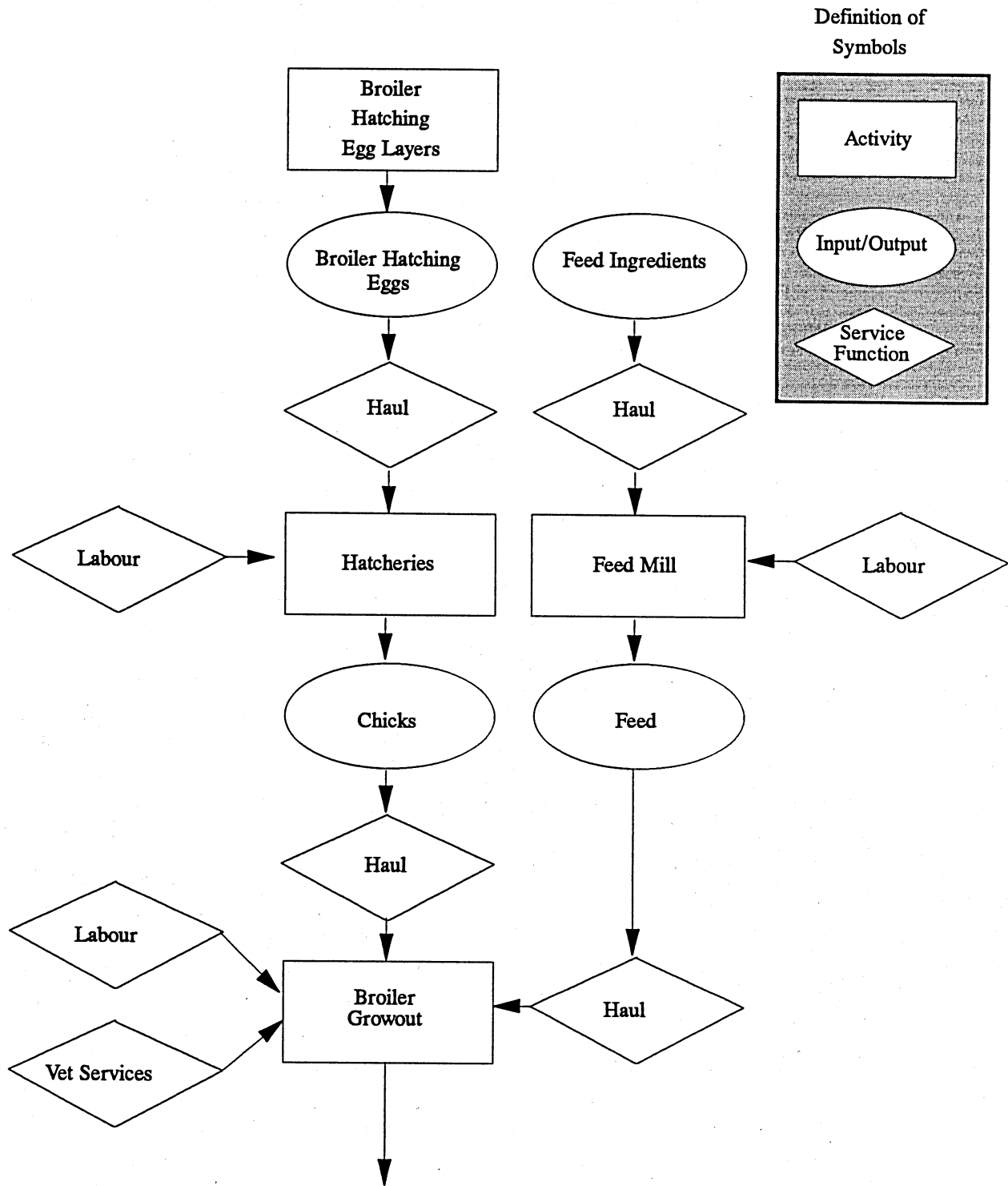
4.5.1 Structure

Two different types of variable inputs are involved in the activities of chicken production and processing: physical inputs and service inputs. Physical inputs include items such as feed, while service inputs include such items as production labour and assembly. The efficiency of conversion of the physical inputs, such as feed conversion and rate of lay, is largely governed by biological, management and technological factors. In contrast, the efficiency of conversion of service inputs such as labour is to a large degree governed by institutional and structural factors, such as maximum size and geographic distribution of the farms. These latter factors contribute considerably to determining the level of service inputs per unit output in the Canadian and U.S. chicken industries.

Figures 4.7 and 4.8 present the implications of cost competitiveness of the different geographical and institutional structures of the Canadian and U.S. chicken industries, in terms of the impact of the structural differences in establishing different rates of conversion of service inputs in the two industries. The flowcharts are developed on the basis of three symbols: activities, inputs and outputs, and service functions.

Figure 4.7 presents the total flows of inputs and outputs in the broiler industry. This flowchart is identical for the U.S. and Canadian industries. The differences emerge in the second flowchart, which illustrates the flows of inputs and outputs for 250,000 broilers. Figure 4.8 indicates that, as a result of the greater dispersal of Canadian grow-out operations relative to U.S. operations, and the significantly smaller size of Canadian operations, a greater level of service inputs, such as labour and assembly, is required in Canada than in the United States to generate an equivalent volume of live product.

FIGURE 4.7
THE BROILER INDUSTRY



Continued ...

THE BROILER INDUSTRY (Continued)

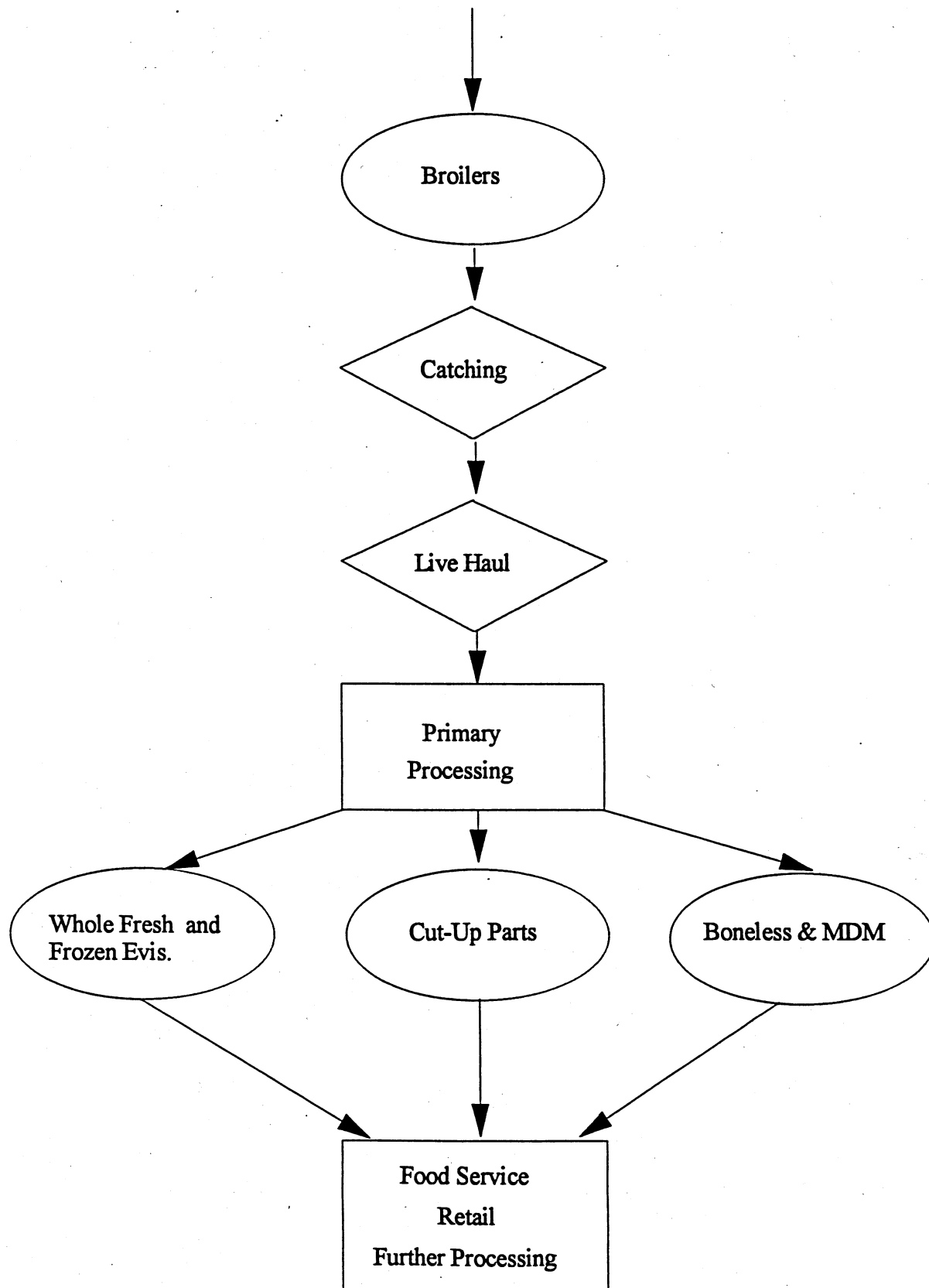
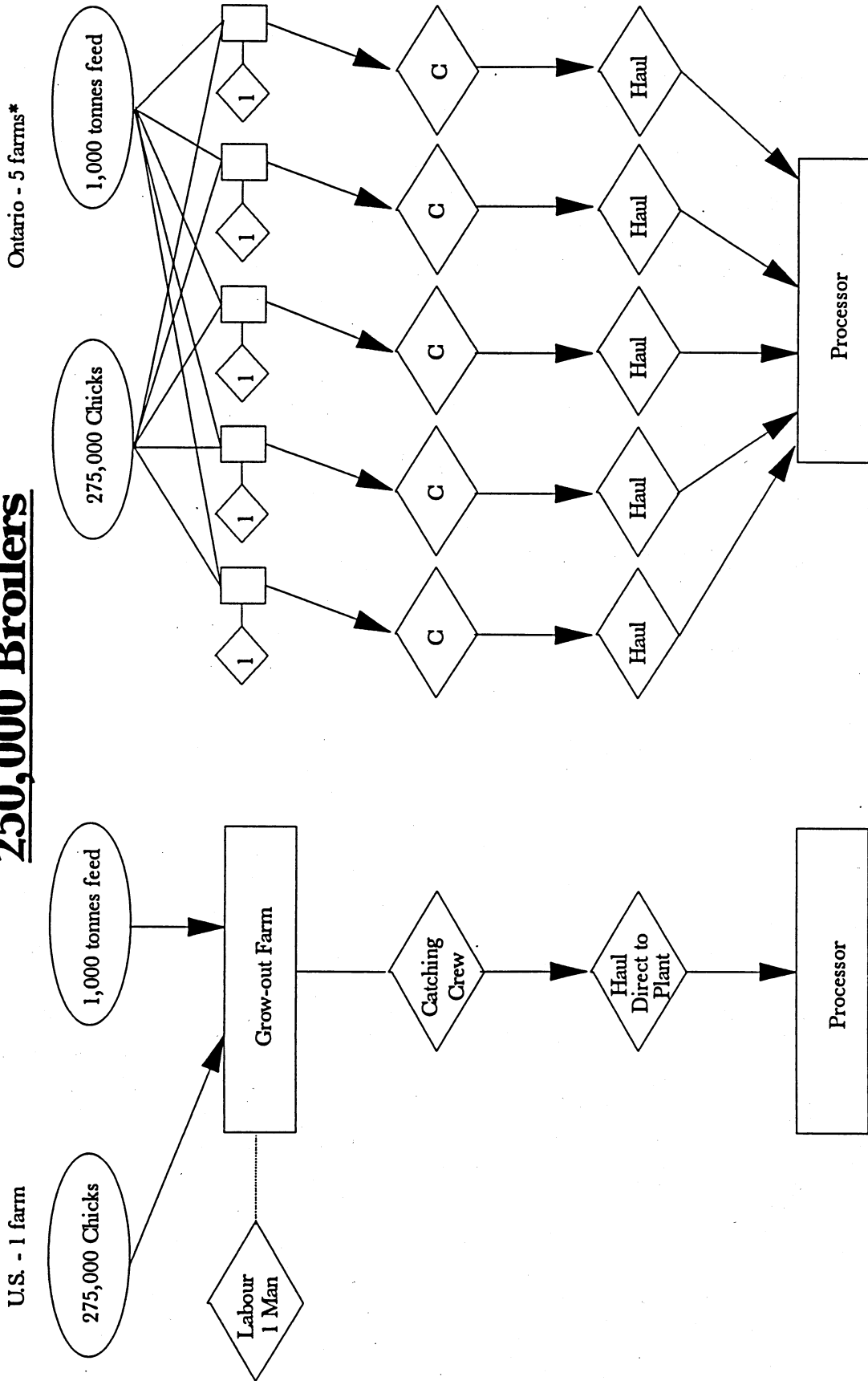


FIGURE 4.8
250,000 Broilers



* Max. Quota: 40,000 units or roughly 50,000 birds per deeded farm

Note: The numbers on this draft chart are indicative only and do not precisely represent actual conditions.

4.5.2 Linkages

Canadian and U.S. poultry industries appear to be operating at the opposite extremes of the range of vertical coordination systems, whereas poultry industries in many other countries have opted for alliances that are strategic, i.e., less rigid than the vertically integrated system but more coordinated than the open market system.

Recognizing the potential for greater cooperation, Agriculture Canada commissioned the George Morris Centre to investigate and analyze business linkages in poultry industries of other countries (Mexico, the United States, Canada, the Netherlands and France) as well as vertical coordination systems in other industries. The objective was to develop an information base on coordination systems that would enable the Canadian poultry industries and federal/provincial governments to discuss in an informed way, options for Canada that are workable within a supply management system in its current or some modified form. The Executive Summary of the consultant's report Alternative Business Linkages: The Case of the Poultry Industries is presented in Appendix A.

4.5.3 Strategies

(a) Production

The regulated nature of the Canadian poultry sector has reduced the market risk, as prices received by farmers closely follow trends in production costs and farmers are guaranteed a market for their product. Moreover, if the quota is underfilled in any period, there is potential for premium prices. By comparison, the U.S. integrator supplies the contract grower with chicks and feed and assumes the risks associated with their cost while paying the grower a return for his labour and investment. Therefore, grower income in the U.S. is also stable as long as the grower is contracted for production. In recent years, contract risk has been relatively low in the expanding U.S. market.

In the U.S., a substantial amount of the risk of input price variability is borne by the integrator. In exchange for having this risk removed, contract growers have given up much of their autonomy as integrators make most decisions associated with operations as well as in broiler house design and management. Contract growers bear the risk of contractors not keeping chicks in housing units (owned and operated by growers) on a regular basis. Integrators control the timing of chick placements to fit the marketing needs. When more birds are needed, a new batch is placed. But, if the processor needs fewer birds, placements will be slowed. Growers find these long delays costly, especially when they must make regular mortgage payments on housing units. In periods of adjustment, growers with the poorest performance records or located farthest from processing plants or feed mills could be dropped, as integrators adjust to market conditions.

(b) Processing

Differences in the organization of the broiler system in the two countries have led to disparate strategies at the processing level.

- The pace of market development (e.g., number of product lines, aggressive featuring etc.) and adjustment is pursued more aggressively in the U.S. than in Canada.
- Interfirm competition in the U.S. is based on price as well as product differentiation. Weak control over supply by Canadian processors limits product differentiation as a competitive strategy.

5.0 CURRENT GOVERNMENT POLICIES

Government policies are responses to economic, social or environmental issues. They may have broad application to an economy (e.g., macro policies) or may be directed at one or more sectors. Policies and their instruments (programs, services, regulations and institutions) provide a framework within which an industry operates.

Policies that affect performance of the agriculture and agri-food sectors may be formed at any level of government (national, provincial or municipal) and may or may not be directed at the farm sector. By the same token, targeted farm policies may have an impact at not only the agricultural sub-sector at which they are aimed, but also on the farm input industries and on downstream industries (processing and distribution) that purchase and add value to farm outputs.

Government policies that affect the broiler industry fall into three broad categories:

- 1) **industry** targeted (e.g., supply management and the U.S. Export Enhancement Program);
- 2) **sectoral** policies applied generally to the agri-food sector (e.g., technical regulations and input subsidies); and
- 3) **non-sectoral** policies which include macro policies (monetary and fiscal policies that are applicable to the nation as a whole) or micro policies that affect parts of the national economy (e.g., social and environmental policies).

The level of government effort under the first two policy categories can be quantified by either direct expenditures or, as in the case of supply management, by the level of protection afforded to the industry. For 1989, support to the chicken industry is estimated for Canada at 51.4% of the value of its farm chicken production and for the U.S. at 17.4% of value of its chicken production (Table 5.1). It is important to note that 90% of the estimated support in Canada is a measure of the regulatory benefits to industry of the existing supply management system.

Non-sectoral policies (macro, socio-economic or environmental) could have substantial impacts on the agriculture sector but the level of effort or the benefits accruing to a specific industry are not quantified easily.

In this chapter, a brief description of each policy is followed by its objectives, level of government effort, impacts of this policy on the industry and current related issues.

TABLE 5.1 GOVERNMENT SUPPORT TO THE CHICKEN INDUSTRY (1989)**NET SUPPORT TARGETED AT THE CHICKEN INDUSTRY**

	Canada		U.S.A.	
	Support \$ Million	% of VOP ¹	Expenditures \$ Million	% of VOP
Supply Management ²	434	47.2	-	-
Corn Countervail	-11	(1.2)	-	-
Export Assistance	-	-	5	0.5
Net Support	423	46	5	0.5

**GENERALLY AVAILABLE SUPPORT TO AGRICULTURE
- ALLOCATION TO CHICKEN ON BASIS OF CASH RECEIPTS -**

	Canada		U.S.A.	
	Expenditures \$ Million	% of VOP	Expenditures \$ Million	% of VOP
Research & Develop.	23	2.5	77	0.9
Technical Regulations	15	1.6	661	7.4
Input Subsidies	12	1.3	446	5.0
Domestic Demand Enhancing ³	-	-	370	4.0
Sub-Total	50	5.4	1,554	17.3
Grand Total	473	51.4	1,559	17.4

¹ Value of Production (eviscerated).

² Reflects gap between price of imported product at the border and domestic price (net of fees and levies). The cost of this support, therefore, is borne by the consumer and not the taxpayer.

³ Budgetary expenditures for retail purchases (food stamps) were adjusted by applying a factor of .33 to estimate support at farm level.

Source: Derived from Agriculture Canada's Net Benefit calculation for 1989, Hill and Knowlton Study of Agricultural Subsidies, and published data used by the USDA in estimating producer subsidy equivalents (PSEs).

5.1 Policies Targeted at the Chicken Industry

Both Canada and the U.S. target assistance to the chicken industry but the policy instruments used and the level of effort are very different. The Canadian government provides significant support to the chicken industry through legislation which permits the establishment of a supply management system. This policy stabilizes incomes through market price support mechanisms (i.e., production quotas, import control and cost of production formula pricing). The cost of this support is borne by the consumer and not the taxpayer. On the other hand, almost all of the U.S. government support to its chicken industry is of the generally available type (sectoral and non-sectoral programs). "Targeted support" in the U.S. is through relatively small direct expenditures under the Export Enhancement Program. Both countries have a tariff schedule for chicken products; currently, effective support to the industry of this policy is minimal in both countries. In 1989, net commodity specific support was 46% of the value of chicken production (VOP) in Canada and only 0.05% of VOP in the U.S.

(i) Supply Management System

Canada has an elaborate supply management system which operates through a set of institutions reflecting the joint federal and provincial jurisdiction for agriculture. The three principal mechanisms used in the supply management system to stabilize and support prices are:

- Control of Domestic Production/Marketing;
- Import Quotas; and
- Cost of Production Formula Pricing.

(a) Control of Domestic Production/Marketing

Production control begins with the establishment of an annual national quota, based on estimates of market needs. The national quota is then divided among member provinces, according to the quota established in the base period and agreed criteria for any increases (see Appendix C). Subsequently, each provincial marketing board allocates base quota to individual producers according to quota held but overbase (incremental) quota allocation rules differ by province. For example, while the Prairie Provinces allocate one-third of their overbase quota to new entrants, B.C. allocates only one-tenth to new entrants. Marketing boards may also control marketing arrangements of growers. For instance, for a roughly two year period in the early 1990s, the Ontario Board assigned producers to specific processors. Currently, however, Ontario producers are free to sell to any processor, generally through contractual arrangements.

(b) Import Quotas

Import quotas are a form of quantitative border restrictions. Such instruments limit the volume of a product that may be traded. The use of import quotas is permitted under the current GATT under special circumstances.

In Canada, import licenses and permits are issued by the authority of the Export and Import Permits Act. A global chicken import quota for 7.5% of the previous year's production was

agreed to in the CUSTA. Supplementary import permits are granted if (i) there are overall market shortages; (ii) product is required for test marketing; (iii) product is to be imported for re-export; or (iv) product is required for the manufacture of items not on the Import Control List.

Under the new GATT, the use of this instrument will be disallowed. Import quotas will be replaced with an equivalent tariff protection.

(c) Cost of Production (COP) Formula Pricing

The authority to use a cost of production formula in determining farm prices for chickens is derived from the federal-provincial agreement with respect to the establishment of a chicken supply management program in Canada. The agreement states: "Marketing Boards and Commodity Boards be directed to establish prices by a method related to the cost of production formula referred to in the plan and any price change will be subject to Agency guidelines approved by the National Farm Products Marketing Council."

The current COP formula for chicken is based on a 1990 survey of a representative sample of broiler farms and the results are used to obtain an average COP for an efficient segment of the industry in each province. The survey takes into account the Council's guidelines on survey sampling and allowable costs. Major cost factors included in the COP for chickens are: chicks; feed; labour, including the farmer's own labour and that of his family; overhead; depreciation and interest costs; and return on producer's investment in the enterprise.

Although market conditions are factored into farm prices negotiated between commodity boards and processors, they closely follow the level indicated by the COP formula, i.e., they tend to fluctuate around the estimated COP. In Ontario and Quebec, the producer price is achieved through a process which has been agreed to by producers and processors in these provinces, and sanctioned by the provincial governments. It involves price negotiations and arbitration, by an independent third party, if negotiations fail. The other provinces also have in place a price negotiation process but their prices, with the exception of British Columbia, tend to mirror price movements in the Ontario market.

Objective: The objective of the supply management policy is to support and stabilize producer incomes at reasonable levels (from the market place) and to ensure the product is marketed in an orderly manner. One aspect of this objective is to raise prices above levels that would be realized if domestic production (and import) controls were not in place.

Level of Effort/Support:

Canada - The level of support from supply management is estimated by the price gap between price of imported product at the border and the domestic price. For 1989, the net level of such support to the Canadian chicken industry was valued at \$423 million or about 46% of the value of farm production.

U.S. - The U.S. government does not have a policy to control production or marketing of chicken.

Impacts/Effects:

(a) Production/Marketing Controls

The quota allocation policy may have resulted in less efficient allocation of production resources and greater physical dispersion of individual production units than if the policy did not exist. The latter effect may have stood in the way of processors achieving full economies of scale, optimal level of investment in capital, and adequate new product development. Consequently, the policy may have had the following deleterious effects on the industry's performance: slower production growth, low export levels and higher prices.

Production and marketing restrictions may also have been the primary cause of strained relations developing among the various levels of the industry in some provinces and the consequent inability to form business linkages that would benefit the industry as a whole.

(b) Import Controls

Production and import controls go hand in hand in the management of supplies. Therefore, import controls have had the same effects on the chicken industry's performance as production controls.

(c) Cost of Production Formula Pricing

Producer prices have fluctuated around the COP since the supply management system for chickens was implemented. These prices have resulted in returns to producers' labour and investment that are well above those in alternative uses. This is confirmed by the reality that incomes from broiler farms have grown to levels substantially above those from other farm types and production quotas have acquired high values.

Issues:

(a) Production Controls

What changes are needed to quota determination and allocation procedures to ensure that the objectives of the supply management policy are met in a way that does not impede competitiveness and market responsiveness of the industry? Changes may relate to the following: the criteria/process for determining the national quota; flexibility in provincial quota allocation adjustments; inter-provincial trading/leasing of production quota; maximum quota holding rules for farms; some other aspect of production controls.

(b) Import Controls

Although tariffication is expected to provide equivalent protection to border controls, are there any associated threats and opportunities that may confront industry and government in the future? For example, as a result of tariffication there will no longer be a requirement to control domestic supply; how will these new dynamics be regarded by industry?

(c) Cost of Production Formula Pricing

Concerns have been expressed by the National Farm Products Council, Poultry Task Force, processors, consumers and academics regarding the calculation of the COP and its application in pricing. The central question is: does the COP formula hinder the development of a market responsive, efficient and competitive industry, overall? If so, what kinds of changes are required to the methodology used for the COP calculations and should the COP be the primary determinant of product prices?

The Council has the authority to approve (i) the methodology to determine the COP formula, and (ii) the use of COP information in pricing formulae and in comparative advantage calculations for quota allocations. The Canadian Chicken Marketing Agency which represents the interests of producers, however, has the mandate for carrying out periodic studies for the calculation of the COP. Although the 1990 COP survey methodology was, in part, unacceptable to the Council, the results were implemented by the Agency in formula calculations. Is there a need to further clarify the roles and responsibilities of the various institutions in the establishment of the COP formula?

(ii) Border Tariffs

Description: Import tariffs or levies raise the landed price of imports. Such charges may be specific (per unit quantity) or ad valorem (set percent of value) and are normally indicated for imports that compete with domestic production. Both Canada and the U.S. impose tariffs on raw as well as processed chicken products.

Objective: To raise the price of imported products, thereby increasing the price competitiveness of the domestically produced product in the home market.

Level of Effort:

- Canada - Canada applies varying levels of tariffs to all imported chicken products, i.e., those on the Import Control List as well as those not on the List. Currently, for product imported from the U.S., these are about 1.76¢/kg for live broilers and about 5% of value for processed products.
- U.S. - U.S. import tariffs for product imported from Canada are 0.08¢/bird for live poultry and 4% of value for processed products.

Impacts/Effects: In Canada, existing tariffs do not have any impact on prices of items on the Import Control List. For these products, prices determined by the supply management system are well above those achievable by tariffs. For items not on the Import Control List, import tariffs provide some price protection but the tariff rates are low and falling. Therefore, currently, the effect of this policy instrument is not significant for Canada.

The U.S. is a significant exporter of chicken products in international markets and U.S. chicken imports are negligible. Therefore, this policy has practically no effect on price competitiveness of U.S. product.

Issues: Tariffs may create the same type of effects as quantitative border restrictions. Under the new GATT agreement, non-tariff import controls are to be replaced by tariff equivalents. Canada has notified tariff equivalents of 280.4% on chicken in excess of its current access commitments. At these levels, the tariff equivalents will provide considerable protection from the low-priced imports, allowing the continued effective operation of supply management systems for the foreseeable future.

(iii) Export Assistance

Description: Export Assistance may take the form of remuneration for exports to industries that for one reason or another are not competitive in world markets (e.g., export refunds used in Europe, Export Enhancement Program in the U.S.). Assistance can also be non-pecuniary e.g., assistance with promotion and marketing to increase presence in world markets.

Objective: To increase or maintain market share or to dispose product that is surplus to the domestic market.

Level of Effort:

Canada - Canada has no such measures.

U.S. - The U.S. government has provided export assistance to the chicken industry under its EEP program every year since 1986. This program was launched in 1985 to help U.S. agricultural exports compete in selected foreign countries where they had allegedly lost market share to subsidized exports of other countries. U.S. government's EEP expenditures for chicken peaked in 1987-88 but were relatively minor in subsequent years. In 1989, they accounted for 0.05% of the value of production.

The U.S. industry also receives some assistance from the government's Market Promotion Program. This is a cost-shared program with the industry and funds have been made available to the Poultry and Egg Export Council.

Impacts/Effects: With the help of export assistance provided by the government, the U.S. industry has been able to maintain a higher level of market share in the Middle East markets than would have been the case otherwise. U.S. exporters have also been able to export brown meat which was surplus to domestic market needs.

Issues: Will the export assistance policies change for governments in light of the new GATT? Would direct financial assistance for exports be acceptable in the context of a supply management system geared largely to the domestic market?

Can the B.C. experience with exporting chicken to offshore markets be extended to other provinces?

5.2 Policies Directed at the Agri-Food Sector

The dollar figures indicated below are estimates of expenditures on the chicken industry, prorated on the basis of farm level cash receipts. Therefore, they do not reflect actual expenditures on the broiler chicken industry.

(i) Research and Development

Description: Research and development programs include scientific research for improving the physical aspects of products or the efficiency of the production process. Such research is not very likely to give an early return on investment. Also included in this policy are extension programs and adoption of technology.

Objective: To carry out research that has economic or environmental significance for the sector (i.e., that will improve its profitability and/or sustainability).

Level of Effort:

Canada - Research and development is conducted by the federal government in its research stations located across Canada. Additional support is provided by provincial governments through grants to universities and through extension programs. Examples include the Agriculture Canada Scientific Research and Development programs, assistance under the industrial development agreements, research and extension programs and agricultural grant to municipalities. For 1989, government expenditures on research and development are estimated to be about \$23 million or 2.5% of the value of chicken production.

U.S. - The U.S. has programs similar to those in Canada. However, U.S. governments appear to place greater emphasis on support through affiliation with educational and non-educational institutions. Examples include Cooperative Extension Services, support to the state agricultural experimental stations, and grants for research to land-grant colleges. U.S. governments' expenditures on research and

development are 3-4 times higher than the Canadian governments, but expenditures as a percent of value of chicken production is lower; 0.9% in the U.S. vs 2.5% in Canada.

Impacts/Effects: The impact of expenditures on research and development depends on the kinds of programs supported. In the U.S., about 85% of government funds are made available to land grant institutions which provide educational and technical assistance and the balance (15%) is for pure scientific research. In Canada, federal and provincial governments contribute about equally to research and development activities with most of the federal funding going toward pure research. The benefits of pure research are difficult to estimate as the period between the time the research is initiated and the new technology is developed may be several years. Applied research programs, which receive greater support in the U.S., are expected to benefit early adopters of new technology either by reducing their costs and/or by generating demand for their product.

- Issues: - How should Canadian governments allocate their resources between market-oriented research and production-oriented research?
- What should industry's role be in the adoption of new technologies and in the development of new value-added products?

(ii) Domestic Demand Enhancement

Description: Demand enhancing programs stimulate demand for specific products through advertising and promotion, government purchases, or the provision of subsidies to target groups for the purchase of these products. For the purpose of raising prices, they are an alternative to reducing supplies through production or marketing quotas.

Objective: Long term food demand enhancing programs generally have the social objective of improving the nutritional intake of a target group(s); ad hoc programs, on the other hand, are likely to have the economic objective of increasing domestic prices for specific products.

Level of Effort:

Canada - Canada has no such measures.

U.S. - The USDA's Food and Nutrition Service has several programs to improve the nutritional intake of target groups. The three most significant in terms of level of expenditure in 1989 are: Food Stamp Program (\$11.6 billion), Special Supplemental Food Program for Women, Infants and Children (\$1.5 billion) and the School Meal Programs (\$0.9 billion).

Based on cash receipts, the government is estimated to have spent \$1.1 billion in 1989 on the chicken industry through its Food and Nutrition Service Programs.

It should be pointed out that support through the School Lunch Program is at the retail level and growers and processors would only benefit partially from this effort.

Impacts/Effects: Programs under the USDA's Food and Nutrition Service increase demand for food generally, including for chicken products. It is not clear what the program's impact is on production costs and product prices but, it should mean higher income for the industry.

Issues: Are general social programs an effective way to increase demand for specific agricultural commodities or do they simply crowd out food expenditures that would have taken place in the absence of these programs?

(iii) Technical Regulations

Description: Technical regulations are policy instruments which affect the form or methods of production, processing, or marketing of a product and address externalities or structural deficiencies. In general, technical regulations increase the cost of production of a product; they may also help differentiate or add value to a product. Examples include animal health regulations, food production and inspection regulations, and packaging and labelling regulations.

Objective: To protect the health and safety of humans and animals.

Level of Effort:

Canada - Federal programs are for animal disease and pest control and for the implementation and enforcement of food product regulations. Both federal and provincial governments provide inspection services to the industry. In 1989, expenditures for such programs were \$15 million or 1.6% of the value of production.

U.S. - Program are broadly similar to those in Canada. As a percent of value of production, expenditures are higher than in Canada - 7.4% vs 1.6%. On the basis of volume, expenditures for inspection services, which account for most of the effort under this policy, are likely to be comparable. These expenditures are particularly difficult to estimate as the U.S. primarily employs a voluntary, cost recovered, poultry grading program.

Impacts/Effects: Technical regulations may increase demand by enhancing consumer confidence and/or by reducing their information gathering costs (labelling regulations). On the other hand, if they are unnecessarily restrictive they may dampen demand. Canadian processors, unlike U.S. poultry processors bear no direct costs for grading program application and delivery other than for the grading process, packaging and grade marking devices.

Issues: - Canada and the U.S. mutually recognize the equivalence of their inspection systems. However, there may be differences in individual standards which may affect processing costs, e.g., standards on chemical washes, labelling.

(iv) Direct Input Subsidies

Description: Direct input subsidies reduce the cost of inputs to the producer or processor thus lowering their cost of production. They may be directed at variable inputs (e.g. fertilizers) or capital inputs (e.g., buildings and machinery). Provision of input subsidies to a particular sector encourages higher production levels than would be the case without such subsidies.

Objective: 1) To lower the cost of production, thus improving profitability; 2) To improve credit availability.

Level of Effort:

Canada - Effort is concentrated in offsetting cost disadvantages because of other policies of governments (interest rate, taxation and transportation policies) and/or market failure (credit availability from private sources). Currently, programs are in place to reduce fuel costs through tax credits, feed costs through transportation and direct subsidies for grains, and cost of borrowing through lower interest rates on credit. Long term credit assistance is provided to address market imperfections relating to asymmetric information between borrower and lender, as well as costs of obtaining information. Provincial governments generally provide additional assistance through preferential property tax provisions for agricultural land. The level of government expenditures depends on how extensively producers avail themselves of the programs i.e., it tends to vary from one year to the next. Based on cash receipts, \$12 million is the estimated expenditure on the Canadian chicken industry in 1989.

U.S. - The rationale for input subsidy policies is the same as that for Canada. Reducing tax burden and cost of borrowing and improving credit availability are primary areas of effort. For 1989, government expenditures on input subsidies for the chicken industry are estimated to be \$446 million or 5.0% of value of farm production.

Impacts/Effects: The range of input subsidies provided to the agriculture sector is wider in Canada than in the U.S. but expenditures as a percent of value of production is lower. In both countries, these programs have reduced costs and, perhaps, reduced the number of bankruptcies in the farming community. Some credit programs might also have increased the level of indebtedness.

Issues: The Canadian list of federal and provincial programs under this policy type is long. Is there need for better coordination of effort by the two government levels to improve efficiency of programs? In fact, are input subsidies an effective means of intervention?

5.3 Non-sectoral Policies

Non-sectoral policies such as monetary, fiscal and environment policies have broader application in an economy than sectoral policies. However, as with sectoral policies, they affect the behaviour of industry, particularly with respect to adoption of technology, use of inputs and market orientation. Environmental policies, generally, tend to increase costs for industries but could be demand enhancing if viewed positively by consumers. Since the chicken industry, like other agricultural industries, is operating in an environment of freer trade under the CUSTA and may be exposed to increased trade pressures under the new GATT, the significance of these policies has been heightened for the industry. The following policies are discussed below: interest rates, exchange rates, taxation, health care, employee benefits and environmental regulations. As mentioned earlier, the level of effort/benefit/cost of these policies is not quantifiable. Associated issues identified generally reflect a limited information/knowledge base relative to non-sectoral policy impacts on specific industries.

(i) Interest Rates

High interest rates in Canada relative to those in the U.S. in the 1980s stemmed from the need to attract foreign capital to finance deficit spending of the federal government and to control the domestic rate of inflation. All lending institutions were forced to keep their rates up in order to stay competitive. In recent years, easing of inflation in Canada has reduced the pressure to maintain a high interest rate gap between Canada and the U.S.

Both broiler production and processing are highly capital intensive. Canadian chicken producers, on average, carry a heavier long term debt than their U.S. counterparts because of the extra cost to new and expanding producers of purchasing production quota. Moreover, as the industry has become more capital intensive and as producer reliance on purchased inputs has increased in recent years, any increase in interest charges paid by the Canadian industry relative to that paid by competitors tends to reduce its competitiveness. High interest costs may also discourage achieving full economies associated with size and the early adoption of new technology at both the farm and processing levels.

Under the current supply management system, chicken producers recover their cost of capital through COP formula driven prices. Therefore, higher interest rates do not reduce their profitability. For the processors, high interest rates raise the cost of birds as well as raise their own costs of debt.

Issues: High interest rates were of major concern to the industry in the 1980s. However, with the gradual lowering of interest rates in recent years they are not as significant a cost consideration.

Federal and provincial/state governments in Canada and the United States have programs to ease the credit burden on farmers. Canadian processing firms are relatively small and may be experiencing difficulty raising capital for risky ventures on new products or processes. Is equity/venture capital as readily available for viable new undertakings in Canada as it is in the U.S., or elsewhere?

(ii) Exchange Rates

Canada has a floating exchange rate policy which means that the value of the Canadian dollar relative to the U.S. dollar is determined each day by supply and demand. The value of the Canadian dollar, therefore, varies with the levels of trade flows as well as capital flows. The Canadian government can and does intervene in the short term through buying and selling foreign currency to stabilize the value of the domestic currency.

The value of the Canadian dollar directly influences the competitiveness of Canadian products in export markets. A decrease in the value of the Canadian dollar will tend to make our products more competitive in world markets. Export oriented Canadian industries such as grains and livestock are very sensitive to exchange rate movements. The supply managed chicken industry is domestically oriented. Therefore, the more than 30% fall in the value of the Canadian dollar relative to U.S. currency since its peak in early 1970s has not affected our exports but has made imports more expensive in Canada.

The weakening of the Canadian dollar has increased the cost of inputs whose prices are set internationally, such as feed and imported machinery and equipment.

Issues: What strategies are available to the Canadian industry, if any, to pursue opportunities and overcome challenges associated with major increases or decreases in the relative value of the Canadian dollar?

(iii) Taxation Policy

Taxation rules for the farm and processing sectors are quite different.

Tax law as it relates to farmers is very complex in both Canada and the U.S. because of the large number of deductions, exemptions and credits applicable to the agricultural sector. Both countries allow farmers the option of using cash accounting principles which can provide increased income tax shelter compared with the accrual accounting method. There are, however, some differences in other tax provisions such as depreciation rates.

Currently, the U.S. federal government rebates all federal taxes on gasoline and diesel. In Canada, farmers are able to obtain refunds for the Goods and Services Tax on fuel purchases for businesses. These purchases, however, are subject to the federal fuel excise tax. Overall, fuel taxes are higher in Canada than in the U.S.

In Canada, the federal tax rate on income from processing and manufacturing is 23%; in the U.S., the federal corporate income tax rate is 34%. Provincial tax rates are generally higher than U.S. state taxes. However, the combined federal/provincial tax rate (36.5%) is about two and a half percentage points below that for their U.S. counterparts (39.28%). It should be pointed out, however, that tax rates do not necessarily reflect the total tax burden in the two countries.

Based on reported tax schedules alone, it cannot be concluded that the effective tax rates for the broiler industry are substantially different in Canada and in the United States because of exemptions, credits, and other differences in the treatment of income and capital expenditures applicable in the two countries. A recent survey by the George Morris Centre showed that the tax burden tended to be higher in Canada than in the U.S. for selected firms operating on both sides of the border.

The replacement of the Manufacturer's Sales Tax with the Goods and Services Tax reduced the tax burden on farmers and processors by reducing the cost of purchasing inputs.

Issues: How do the specific provisions of the tax systems in Canada, the U.S. and elsewhere affect the business decisions, and the resulting cost-product competitiveness, of their respective broiler industries?

(iv) Health Care

There are salient differences in health care policies in Canada and the United States. Canadians have a universal and comprehensive hospital and medical insurance program that provides all necessary medical services and is essentially publicly financed. In the U.S., health insurance is mostly provided under private plans, and much of the cost is absorbed by the employer; the majority of medium and large employers pay the entire cost of private health insurance coverage for their employees, and some pay for dependents as well.

The burden of providing health care is clearly much greater on U.S. businesses than on their Canadian counterparts.

Issues: Will the anticipated reform of the U.S. health care system affect competitiveness of its industries?

(v) Employee Benefits

In Canada, unemployment insurance is federally administered and, generally, eligibility, contribution, and benefit rules are uniform across provinces. In the United States, the unemployment insurance program is mainly state administered, and eligibility and benefits vary considerably from state to state. States in the south, a region where broiler production is concentrated, offer the lowest income protection. Employer contribution is also likely to be the lowest in this region. The Canadian system of unemployment insurance is more generous and comprehensive than the U.S. system. U.S. industries tend to spend less on unemployment insurance than their Canadian counterparts.

Canadian employers, however, tend to spend less on pensions and workers' compensation than their American counterparts. The reason is that pension and insurance programs are partly supported by general tax revenues.

Issues: How might possible changes to Canada's Unemployment Insurance and related programs affect the relative competitiveness of the broiler industry?

Under the supply management system, whole and cut-up chicken and breaded and battered products are on the Import Control List while highly processed products, such as dinners, are not. Currently, the bulk of the domestic demand is for products that are on the Import Control List and this situation is not expected to change for some time. However, the share of ICL controlled products in total chicken consumption is expected to decrease because of growth in demand for further processed products. The fact that the fastest growth in demand is for high value-added products that tend not to be on the Import Control List presents a challenge to the entire chicken industry, from input to distribution levels, to become more competitive. Under the CUSTA, tariffs on poultry and poultry products that were in effect in December 1988 are on a ten-year phase-out schedule starting January 1, 1989. Therefore, by January 1, 1998 those tariff protections on non-ICL items will be eliminated.

Price and quality response by industry will determine whether the anticipated growth in demand will translate into higher output of domestic product.

6.2 Factor Conditions

Environment and Land Use North Americans are increasingly aware of and troubled by environmental concerns. Governments and industry are responding with new initiatives to better understand environmental implications of current levels of activity or growth. In general, environmentally sustainable practices by businesses increase the cost of production.

The environmental issue most pertinent for chicken processors is the cost of water use and waste disposal treatment. Provincial governments are concerned about the impact of waste disposal practices on the environment as are state governments in the U.S. Industry will need to work with their respective governments to plan reasonable timeframes on compliance with new environmental regulations.

Research and Technology Transfer In Canada, the federal government is a major source of primary research on agriculture. Scientific research currently being done by Agriculture Canada is on long term selection methods, immune response issues, genetic engineering for desirable traits and disease resistance, and nutrient requirements. Agriculture Canada is increasing efforts directed to the adaption and adoption of technology that has been developed elsewhere.

The U.S. industry will continue to carry out in-house research related to product development as well as provide funding for research carried out elsewhere. Canadian firms will need to step up commitment to research and development to compete effectively against U.S. product.

6.3 Structure, Linkages and Strategies

Structure Under the supply management system, provincial broiler production has been roughly in proportion to historical production patterns and may not adequately reflect changes in population distribution. The structure of broiler farming within provinces has been determined by the quota allocation policies of marketing boards. Under the new GATT, border controls will be replaced with equivalent tariff schedules and Canada will not be required to manage domestic supplies. It is not clear how the Canadian industry will respond.

6.0 LOOKING AHEAD

The previous five chapters are intended to provide an improved understanding of the current performance of the chicken industry relative to that in the U.S., and to outline the factors, including public policy, that influenced industry structure, conduct and performance. It is also important to understand the forces that will be at play in the future and the implication of these for industry and governments. This chapter provides a broad view of the likely business climate for the industry in the coming years. Chapter 7 brings out the main conclusions of the report and highlights implications for industry and government consideration.

6.1 Market Conditions

Demand for chicken products will remain high in the years to come because of population increases, demographic changes and consumer preferences.

Demand for chicken is expected to grow at a faster rate than the 1% per year forecast for population growth. The primary reason is that protein requirements will increase at a higher rate than population because of changing age distribution - more elderly and fewer young children. Although caloric requirements for adults decrease substantially with age, the quantity of protein required by the body remains fairly constant. The protein requirements of adults and seniors is higher than for children. Hence, as the proportion of children declines, the protein requirements of the population as a whole increases.

Consumer expenditures on chicken will also reflect the diversity of ethnic mix. In 1986, 25% of the Canadian population was of non-British, non-French origin but its representation increased to 31% in 1991. In this group, Asians accounted for 16% in 1986 and 20% in 1991. Asian diets differ from those of the west; they tend to eat more poultry and pork and less beef and dairy products. If their representation continues to increase, as expected, the demand for poultry products will also rise.

Other population trends that are positive for the poultry industry are: smaller households, better educated population, more married women at work and more health conscious consumers.

What are some of the implications of these socio-demographic changes for the chicken industry?

- There will be pressure to strictly meet raw product specifications as demand for items such as KFC, Swiss Chalet and deli meats increase - these types of establishments have very specific requirements on quality and portion size.
- More heavy-weight birds will be needed for further processing as these are more cost efficient in production and processing.
- Consumers will look for ease in meal preparation, appealing taste, and variety at a reasonable price relative to competing products on the market. New opportunities will be open to further processors who can effectively supply product with the required characteristics.

Changes in the structure at any one level can have implications for upstream or downstream industries. For example, rationalization in the hatchery industry could raise the cost of chicks and/or diminish their availability for producers; and increased concentration at the retail level erodes the bargaining power of processors.

In the U.S., production is concentrated in the low cost regions of the southern states. Rising transportation costs for feed grains may induce some processors to locate in the mid-west grain belt region. Grower operations will likely mushroom within 20 miles of the new processing plant locations as they did in the south. Such dramatic shifts in production patterns are unlikely in Canada under the current quota allocation system.

Linkages The broiler industry has evolved differently in different countries. In Canada, industry structure and linkages between industry participants have been influenced by the protection from international and domestic competition provided to the industry by the supply management system. Increased competition from imports and no requirement to manage supplies under the new GATT are compelling reasons for industry participants to work toward a common goal of becoming more competitive through better communication, cooperation and coordination. A study entitled **Alternative Business Linkages: The Case of the Poultry Industries** (see Appendix A) reviewed this issue and outlined a number of options within the supply management system that might be considered to better coordinate industry activities.

Strategies In implementing the supply management system, Canadian chicken producers have implicitly expressed the following three elements of their strategy: 1) domestic orientation of their product; 2) all income from the market place, i.e., no dependency on public funds; and 3) control of supplies to stabilize prices at target levels. This strategy has contributed to loss of market share in the domestic market and no growth in exports to world markets. Industry may need to adjust some elements of their strategy in an effort to arrest further deterioration of market share. Processors too will need to examine their raw product sourcing and marketing strategies in a changed trading environment under the new GATT.

6.4 Government Policies

International trade commitments will continue to impact the agriculture sector, now and in the future. National governments will continue to support their various economic and social objectives, but these policy objectives will be met in ways that are compatible with international agreements.

6.4.1 International Trade Policies

Since the establishment of the supply management system for chickens in 1979, the industry has operated under highly protective international trading rules. Outlined below are the provisions of the CUSTA, NAFTA and the new GATT that have implications for the chicken industry.

The Canada-U.S. Free Trade Agreement, which became effective in January 1989, provided for increased access to the Canadian chicken market:

- The global import quota for chicken products on the Import Control List was increased from 6.3% of previous year's domestic production to 7.5%. Canadian imports have exceeded those limits every year since 1989 as supplementary imports have been authorized to offset market shortages.
- All existing tariffs on Canada/U.S. bilateral trade are to be eliminated by 1998. As a result, imports from the U.S. will continue to have improved access to the growing Canadian market for high value-added products.

With respect to NAFTA, trade with the U.S. will be ruled by the market access provisions of CUSTA. Canada and Mexico have also agreed to exclude their import measures (tariff and non-tariff) for the dairy, poultry and egg sectors. Therefore, there will be no effect on this sector as a result of the market access provisions of NAFTA.

The current GATT allows Canada to control imports using quotas in order to permit it to meet its objectives of managing domestic supplies. Implicit in this provision is the requirement for Canada to control domestic production/marketing until the new GATT is implemented.

Under the new GATT agreement, non-tariff import controls are to be replaced by tariff equivalents. Canada has notified tariff equivalents of 280.4% on chicken in excess of its current access commitments. These tariffs will decline 15% over six years from 1995.

6.4.2 National Policies

Currently, Canada operates under a system of supply management for the chicken industry. Under the new GATT, equivalent border protection will be provided through tariffs. The new agreement does not mandate that domestic supplies be managed. Canada appears to be moving away from commodity/industry support to whole-farm support programs. Industry and governments will continue to work closely together to affect any change.

Macro-economic policies have been of concern in the past. The interest rate differential with the U.S. has narrowed considerably in recent years and the decline in the value of the Canadian dollar has provided increased protection from competing imports. Unpredictability of macro policies will continue to be of concern when making investment decisions.

6.4.3 Provincial Policies

Provincial governments are concerned about budgets, regional economic growth and employment levels. In the past, they have sought to maintain a healthy broiler production base in their respective regions in support of rural structures and processing operations.

Provincial governments are expected to continue to provide support to the agri-food sector through input subsidies, research and development activities and preferential tax treatment. Greater harmonization in these provisions could be pursued in the future.

7.0 CONCLUSIONS AND IMPLICATIONS

7.1 Existing Supply Management Policy

7.1.1 Rationale

The broiler chicken industry is one of the most regulated food industries in Canada. The impetus to regulate the industry stemmed from the considerable hardships being experienced by even the most efficient producers in the 1970s. These hardships were related to market disruptions caused by inter-provincial product movements and considerable seasonal and cyclical price variations. As well, changes in the structure and ownership of the poultry industry in the U.S. instilled fear among Canadian producers of losing control to foreign, non-farm interests.

7.1.2 Objectives

The supply management policy was put in place to **achieve price stability in the marketplace, provide efficient producers with a fair return on investment, maintain regional production capabilities, ensure adequate supplies of high quality products to consumers at reasonable prices and maintain the family farm** (objectives based on the supply management marketing plan and comments made by the Minister before supply management for chickens was put in place). These objectives were to be met through the authorities granted to the National Farm Products Marketing Council, the national marketing agencies and the provincial boards. The system utilizes three main concepts: production control at the farm level; cost of production as a guide for pricing of farm production; and import controls which prevent disruptions to the domestic market due to fluctuating import levels.

7.1.3 Intended and Unintended Impacts of Supply Management

The supply management system has successfully met its initial objectives but there have been fallouts of the policy that have adversely affected the industry's ability to compete in international markets and to be responsive to even the domestic market. Following is a discussion of the intended and unintended impacts of the supply management system and related policy issues.

7.1.3.1 Intended Impacts

Price Stability Farm prices in Canada have risen gradually over the years. The supply management system has afforded the farm, processing and retail sectors protection from imports, thereby eliminating a major source of price competition for the industry. Price stability has been achieved but, to a degree at least, at the cost of higher price levels for consumers.

Fair Return on Investment for Efficient Producers Before 1979, incomes had been observed to be chronically inadequate for many chicken producers and sporadically depressed for all. Since 1979, provincial marketing boards have negotiated broiler prices with processors that have fluctuated around the estimated cost of production for all producers. As a result, broiler production has become a consistently profitable venture for most producers.

Maintain Regional Production Capabilities Provincial chicken production shares remain at roughly the same levels as in the late 1970s.

Preserving the Family Farm The grower quota allocation rules of provincial marketing boards stipulate a maximum for quota holdings. This has likely kept the average farm size small but it is not clear that credit is due to these rules for preserving the family farm. Poultry farms in both Canada and the U.S. are generally family owned and operated. The major difference is that it takes more family farms to grow a given number of chickens in Canada than in the U.S. (Also see unintended impacts of quota policy in Section 7.1.3.2.)

Adequate Supplies of High Quality Product at Reasonable Prices to Consumers

Canadian chicken is of one of the highest qualities in the world with respect to food safety standards. Supplies have generally been available to meet demand but at times the product could not be sourced anywhere in Canada and supplementary import quotas had to be issued. Chicken prices are substantially higher than those in the U.S. at all levels of the marketing chain.

7.1.3.2 Unintended Impacts

The supply management system has not only stabilized farm incomes but increased them to levels that are above those on other types of farms, as well as above average Canadian household incomes. In the early years of the program, the distributional impact of the system was the main issue for academics and consumers but more recently the competitiveness concern has been in the forefront for industry participants and governments. Both distributional and competitiveness impacts are discussed below.

A. Distributional Impacts:

Consumers-Industry

The supply management system does not involve significant government (taxpayer) expenditures. Consumers, however, pay higher prices than what they would have paid had the industry not been regulated.

In 1989 the Canadian chicken industry received income support from supply management of \$423 million. This estimate primarily reflects the difference between domestic and landed price of imports applied to the total Canadian production in 1989. It includes support to producers, import license holders and processors.

Empirical evidence on the profitability of the sector (and transfer from consumers to producers) is provided by the rise in quota values since the establishment of the supply management system. Although it is recognized that quota trading is thin and that quota values vary by province, a rough estimate of the transfer to producers may be obtained using October 1993 quota values in Ontario (\$23 per unit; each unit is for 1.4 kg per production period; six production cycles per year). Assuming an average national quota value at \$20 per unit (Ontario quota prices are regarded to be the highest in Canada) and applying it to yearly chicken production of

approximately 600 M kg, it is estimated that in 1993 the present value of potential rents attributable to the supply management system was \$1.2 billion. Since the current payback period is assumed to be five to six years, the estimate of annual benefit to producers in 1993 dollars is \$250-300 million per year or 40-50 cents per kilogram.

Quota Holders

Provincial marketing boards allocate production quota free to producers. Over time, however, this right to produce has become capitalized; that is, it commands a price like other assets. First generation quota holders have received windfall gains as any price for sale of quota is above their zero acquisition costs. Producers who purchase quota from exiting producers will pay a higher price which reflects the present value of their expected future returns. This price has risen over time because product prices are expected to rise faster than production costs. Conversely, if future returns are expected to fall, the value of all the assets specialized in the production of chickens (including production quota) will fall and producers will experience wealth loss.

B. Cost Competitiveness Impacts:

Capital costs higher by amount of quota value

As a result of the significant rise in quota values, the capital costs of new entrants are very high. These costs must be recovered from the price received from the sale of birds. The fact that a new entrant usually needs to take on a large long term debt to purchase quota also acts as a barrier to entry.

Constraints to maximizing efficiency

(i) Comparative advantage of production

The total chicken market has grown significantly (more than 75%) since the CCMA was established. As a result, the size of the chicken overbase quota (quota increase since 1979) is significant and its provincial allocation is a dominant concern of the provincial governments and the chicken marketing boards. Federal legislation requires the CCMA to consider comparative advantage in allocating to provinces any increase or decrease in the total Canadian market. Despite this, provincial production levels do not fully reflect comparative advantage in production.

(ii) Maximum quota allowed per farm

The size that Canadian chicken farms can attain is constrained by the maximum quota holding allowed and the trading policy in each province. On maximum quota allowed, New Brunswick is least restrictive (200,000 birds per cycle) and Saskatchewan the most (40,000 birds per cycle). In several provinces (Saskatchewan, Manitoba, Nova Scotia and Prince Edward Island), quota may not be sold without the farm unit. Such restrictions have maintained farm sizes smaller and more widely dispersed than in the U.S. It is

generally felt that removal of these restrictions would allow production units to achieve higher economies of size and lead to lower assembly costs (live haul and catching).

(iii) Processing sector capacity and utilization

Primary processors are distributed across Canada in rough correspondence to provincial consumption. In Canada, the majority of primary processing facilities run one shift a day while those in the U.S. often run two. At two shifts per day, processed volume could expand in any region without major capital investment, thus reducing the processing cost per unit of output. Modern transportation methods allow fresh chicken to be shipped long distances and perishability of product is less of a concern now than it was some years ago. At the same time, many of these facilities are relatively small and do not fully exploit scale economies.

(iv) Lack of industry coordination

Relationships between parts of the sector, particularly between producers and processors, have tended to be more adversarial than collaborative. This situation is gradually changing and a wider recognition of mutual interests appears to be emerging. Greater trust and better coordination of effort amongst industry members should help improve efficiency, lower costs and improve profitability.

(v) Inter-provincial rivalry

In 1989, B.C. withdrew from the Canadian Chicken Marketing Agency citing their inability to achieve production objectives while in the system. Other provinces sometimes express similar concerns. Managing individual interests while maintaining the integrity of common goals will continue to require flexibility and compromise amongst all participants.

Cost of Production Formula

The estimated average cost of production for all farms is the primary basis for price negotiations between marketing boards and processors. There is some debate among stakeholders about whether the COP formula is inflated, in particular with respect to owner/operator hours, wage rates and rates of return. Dissatisfied with the COP calculations, the National Farm Products Council has not approved the 1990 COP survey of the CCMA. Nevertheless, these calculations form the basis of present prices. Post-farmgate sectors have also strongly expressed the opinion that COP should reflect the true costs of efficient farming operations. The definition of an "efficient farming operation" is also debated among stakeholders.

A more fundamental issue is whether or not COP formula pricing, however determined, is an appropriate means for setting prices, particularly in the longer term.

C. Product Competitiveness Impacts:

Restrained Production Growth

Per capita chicken consumption is significantly lower in Canada than in the U.S. This is likely, at least partially, the result of higher prices for chicken relative to those of competing meats in Canada than in the U.S., and the slower introduction of, and response to demand for, new further processed products.

The Canadian supply management system has separated the domestic market from the international market. Canadian producers have effectively given up their ability to compete in the world market in return for a guaranteed (high) share of the domestic market and guaranteed prices and profits. At current production costs, Canada's ability to capture foreign markets is limited. If Canada resorts to dumping or subsidizing exports, other countries likely will not tolerate such action, even if export subsidies are producer-funded. On the other hand, the U.S., a low cost producer, has significantly increased its exports in recent years.

The Canadian chicken industry, therefore, has grown only to satisfy the relatively slow growing domestic market. Exports are usually under 1% of production and are generally by-products. Production growth was impressive in the 1980s but appears to have slowed down considerably in recent years.

New Product Development

The small size of the Canadian market, the high price of raw product and the inability to access needed quantities of raw meat by further processors may have limited the development of new products in Canada.

7.2 Implications

The structure of the Canadian chicken industry has not changed significantly since the supply management system was put in place in 1979. Farm sizes tend to be smaller than those in the U.S. and both farm and processing operations are widely dispersed in Canada. In some regions, processing plant sizes do not exploit full economies of scale and often operate at levels well below full capacity. Vertical business linkages are weak, and stakeholders are pursuing apparently divergent strategies. There has been only limited responsiveness within industry to the changing nature of demand. Although the Canadian chicken industry has grown continually in the past decade, the rate of growth has been significantly lower than that in the U.S. or the world; prices in Canada have been higher than those in the U.S. at all levels of marketing; exports have been negligible even though world trade in chicken meat has increased dramatically, but imports have been rising, within the limitations imposed by Canada's international commitments.

The chicken industry is approaching a crossroads. It must decide, implicitly or explicitly, how best to begin to position itself to address the opportunities and the challenges of the future.

On the one hand, the industry can continue to operate as a regionally dispersed, domestic market oriented supplier of whole, cut-up and primary processed products. In this way, existing industry structure and performance characteristics might be maintained for some time to come. However, growth opportunities relative to export demand or domestic demand for further processed products might largely be foregone.

Alternatively, the industry can begin to refocus its efforts so as to pursue more aggressively both higher value-added and export market opportunities. Doing so would appear to imply the need for institutional arrangements that ensure more flexibility for production, processing and distribution operations, working together, to respond to changing market needs.

Clearly, this is not simply a choice between no change and massive sudden change. The real question is how much change is desirable, and how fast should such change be introduced.

The answer might depend largely on one's view as to how capable/competitive the broiler industry is and could become, and whether or not the inevitable competitive pressures of operating in a more liberalized trade environment should be avoided as long as possible or prepared for as soon as possible.

Following are specific issues that might warrant further consideration.

A. Issues in Relation to Changing Economic and Market Conditions

If the broiler industry is to realize a more significant contribution to economic activity, the following questions need to be addressed.

- What are reasonable, long term growth objectives, for the industry overall and for its farm and processing segments in domestic and export markets?
- How can current constraints to improving cost competitiveness be reduced/eliminated? Of particular importance are:
 - quota costs;
 - scale inefficiencies (for farms and processing plants); and
 - pricing mechanisms.
- How can current constraints to improved product competitiveness be reduced/eliminated? Of particular importance are potentially lost opportunities for new product development and product differentiation/value-adding.
- Overall, how can the industry work together to improve vertical communication and coordination, so as to improve market responsiveness and overall competitiveness of the entire vertical chain?

If industry and governments are unable or unwilling to address these questions and to introduce appropriate new approaches to better respond to changing market conditions, then economic opportunities will be lost.

B. Issues in Relation to Institutional Operations

Substantive changes are required to the existing supply management system if the industry, from production through to distribution, is to more effectively compete in domestic and export markets for primary and, in particular, for further processed products.

- How much flexibility can/should there be for quota to move between producers and between provinces?
- How can decision-making structures better balance and consider the legitimate interests of stakeholders?
- How can regional/provincial self-sufficiency aims be balanced against the requirements of high efficiency and productivity levels?
- More generally, what are the characteristics of a "system" that fulfills the original objectives of supply management while also responding better to consumer price and product demands?

C. Issues in Relation to the New GATT

1. Administration of tariff rate quotas under the new GATT

Existing import quotas under the Export and Import Permits Act will be replaced with tariff rate quotas under the Customs Tariff Act when the new GATT is implemented. The following are some of the related questions that need to be resolved before then.

- Should import quotas be allocated or should trade be allowed on a first-come first-serve basis?
- What criteria should be used in the issuance of tariff rate quotas?
- Should supplemental tariff rate quotas be issued and, if so, under what circumstances and to whom?

2. Effects of GATT rules on potential chicken exports and imports

At the current cost of producing broilers in Canada, the product is not price competitive in the U.S. market. U.S. processors also appear to have both cost and product attribute based competitive advantages in supplying further processed products.

- Is there an appropriate, and internationally acceptable, long term strategy for promoting further processed product and export sales and, if so, what products and markets should be targeted?

3. Managing domestic supply

With tariff equivalents replacing import controls, effective protection from foreign competition is assured. However, there is no longer a requirement to manage domestic supply levels. How can industry ensure a smooth transition from the existing to some new regime?

As noted at the outset, this report has attempted to contribute to the development of a more common understanding of the competitive performance and potential of the broiler industry in Canada, with particular reference to the current policy environment.

It seems clear that the supply management system, as conceived in the early 1970s, has achieved many of its original objectives. There have been benefits, both to consumers and to industry participants, but there have also been costs.

The challenge now is to conceive a system that balances the interests of input suppliers, producers, processors, distributors (including food service operators) and consumers, in consideration of the economic and market realities anticipated over the coming years. This report deliberately stops short of attempting to conceive such a system. The information contained herein should provide a base from which stakeholders can move forward to develop public policies and industry strategies that will improve the ability of all parts of the sector to realize their competitive potential.

APPENDIX A

EXECUTIVE SUMMARY

ALTERNATIVE BUSINESS LINKAGES: THE CASE OF THE POULTRY INDUSTRY

This study investigates and analyses business linkages in the poultry industries of Mexico, the United States, Canada, the Netherlands and France. It also examines the business linkages in eight case studies, five of which are in the poultry industries and the remainder of which are from other industries.

The specific objectives are to: trace the development of industry structures including vertical and horizontal linkages in the five countries; develop case studies to illustrate alternative approaches used in developing linkages; develop and evaluate options that may be used by the Canadian industries for improving business linkages within a supply management system; and suggest roles that the poultry industries and governments may play in support of industries' efforts to enhance existing or new linkages.

A theoretical framework is developed to describe the structure of business linkages. Business linkages fall into a continuum between open market transactions and vertical integration. In open market transactions each firm pursues its individual objectives, without regard to the objectives of others. The term strategic alliance is used to describe business linkages of a particular nature. It is defined as "business arrangements in which the organizations involved share risks and benefits emanating from, and mutually control the decision-making processes related to, a mutually identified objective." This objective may be different from, but not in conflict with, their individual organizational objectives. Unlike strategic alliances, integration involves one firm acquiring the ownership of one or more other firms in order to enhance the achievement of its objective.

This framework proposes some hypotheses about the particular form of business linkages that should evolve based on the nature of the transactions between the parties. Amanor-Boadu and Martin suggest that the form of business linkages depends on trust, risk and competence while Mahoney proposes that task programmability, asset specificity, and non-separability are the determinants of business linkages. Trust implies a confidence that the integrity of a prospective partner can be relied upon, risk relates to market, production and other uncertainties related to the product of interest. Competence is the ability to deliver inputs and outputs to specification. Programmability implies that the transaction is well understood between the parties and non-separability is the inability to allocate rewards based on performance. Asset specificity relates to the special nature of the assets being exchanged by the parties or being used in the production process of the product being exchanged. A high asset specificity requires that one or both parties invest in specialized assets, an action which will not happen if there is no strong bond between them.

Country Studies

In the countries other than Canada, large portions of the egg, chicken, and turkey industries are vertically integrated by large firms. The integrator typically controls farm-level production through contracts and controls the rest of the production/processing chain through direct ownership. However, there are additional types of business linkages which exist throughout the poultry marketing system in Mexico, the U.S., France and the Netherlands. For example, there is a wide variety of terms to grow-out contracts: fixed price, fixed quantity, shared upside price risk, delivery at market price, fixed margin, etc. In addition, these markets also have alternative marketing channels. In France and Mexico, there are many independent small-scale producers who deliver directly to traditional farmers' markets. Farmers' cooperatives in Europe and the U.S. also provide an alternative coordination system between producers and primary processors, although these firms may behave identically to noncooperatives with regard to contracting. Finally, the French, Dutch, and American markets have developed vertical niches for products that respond to increasingly segmented consumer markets.

Case Studies

The Label Rouge case study illustrates that direct collaboration among growers, processors, hatcheries, and feed companies can lead to the development of new product markets. More than 20% of poultry purchases in France are of this high price, high quality type. This case also illustrates that government intervention in quality assurance can lead to a sustainable competitive advantage. Two agencies, *Organismes Certificateurs* and *Qualite France*, ensure that quality standards are maintained at all levels of the vertical chain. Consumers' willingness to pay 100% price premiums over ordinary poultry products provides an indication of the success of these products.

The Curtice Burns/Pro-Fac case study shows that the activities of the farmer cooperative (Pro-Fac) provide benefits to both growers and the canning company. Growers benefit in that the farmer cooperative makes available the value-adding activities of the canning/marketing firm. The canning company benefits by being able to maintain a steady source of supply through its relationship with the cooperative. Another benefit is that the growers and the canning company have access to funds at favourable rates from the Bank for Cooperatives as a result of their membership in the alliance.

The case study on Dole Fresh Vegetables indicates that information can be used as a source of value-adding. This not only provides a unique product to the consumer but also benefits competent growers who produce high quality products and the marketing company that maintains that quality.

Suggestions

The applicability of the lessons that can be learned from this study for the Canadian poultry industries depends on the policy environment in which it will operate, whether there is a demand for different qualities of product as there is in Europe, and the industries' perception of what they would like to be. One outcome that is unlikely to occur is preservation of the status quo. A

second outcome that is unlikely to occur is the dismantling of the marketing boards and supply management. In this study, it is assumed that marketing boards will remain, although the nature of supply management may change in order to improve the performance of the poultry industries and/or in response to altered multilateral trading rules.

The study makes three suggestions for industry and government which could help in building vertical linkages in the Canadian poultry industries.

The first suggestion is to negotiate and coordinate contractual arrangements between growers, feed companies, processors and further processors. Marketing boards could take on varying degrees of responsibility. For example, a board could take on a passive role to any contracts, that is, the board would "provide a room" in which growers and processors could reach mutually agreeable contracts. Alternatively, a marketing board could become a party to the contract by promising performance as to delivery date, product quality, or other terms. A board could also act as a guarantor of performance of either or both parties, by having foresight and remedies for quality, delivery, payment, etc. A board could also help define some typical contract terms, maintain the information system necessary for all parties to monitor the market, and/or receive and disburse funds from market transactions to relevant parties.

The second suggestion is to develop alternative products and product standards in the nature of Label Rouge. If Canada's strategy was to develop the products for continental or international markets, there would be a role for existing organizations. The government would have two roles to play. First, it would encourage and promote investment in research and development in the poultry industries so that alternative products can be developed and product standards can be established. Second, like the *Organismes Certificateurs* and *Qualite France*, the government could be responsible for controlling product specification and quality. This could involve government inspection at critical points in the production system to ensure that participants comply with the established standards.

The third suggestion is to develop strategic alliances in the vertical chain that incorporate end use and shared risk pricing procedures or alliances like the one already in place between Curtice Burns and Pro-Fac. This type of approach would help ensure a structure in Canada that does not include the degree of vertical integration that exists in the U.S. or Mexico, while also providing more direct relationship between growers and the product markets. Marketing boards could play a role in negotiating such joint ventures either on behalf of the industry as a whole or selected groups within it. Another possible role for marketing boards is to guarantee the equity and effectiveness of the information system.

The role of the poultry industries in these approaches is to enter with an attitude of trust, integrity, openness and a desire to create consumer value in the products and processes that would operationalize any of these three alternatives.

APPENDIX B

SUMMARY OF PROVINCIAL PERSPECTIVES

An effort was made to get some provincial perspectives through questionnaires sent to regional offices of Agriculture Canada. The responses reflected industry consultations at regional level. Presented below is a summary that attempts to capture some regional perspectives.

A. Processing Sector

Level of Processing

The poultry processing industry appears to have adapted quickly consumer demands at retail food service, usually by following-up on product development in the U.S.

The primary poultry processing industry is not concentrated in any particular region i.e., major plants are present in all provinces, except P.E.I (P.E.I. has no processing facility); further processing is concentrated in the larger provinces.

Processing and further processing operations include a wide variety of products. The widest variety of further processed poultry products are produced in Ontario (and Quebec). Lilydale (Alberta) has the largest further processing operation for poultry in Western Canada. Several food processors produce further processed products using chicken. Further processing activities are not reported for the processing plants in New Brunswick nor P.E.I.

Integration Trends

Integration could be mainly characterized by vertical backward integration. The broilers processing enterprises report quite often integrated activities such as hatcheries, feed supply industries. Some major companies in Alberta and Ontario also own poultry farms. Cooperatives are important in poultry processing; cooperatives in Alberta, B.C., Manitoba, Quebec and Nova Scotia have a strong alliance with their producer members.

Newfoundland Farm Products Corporation is a provincial government crown corporation and has some linkages to wholesaling and retailing. Some companies in B.C. are reporting linkages to the wholesale sector.

Capacity Utilization

Plants in the western provinces are operating at under-capacity levels, except in Alberta where plants are operating at capacity with one shift. Several plants in Western Canada have been modernized. Many poultry processing plants in Ontario are running at under-capacity levels while in Quebec they are generally operating at full capacity. In the Atlantic region, most of the major plants are currently running at capacity, as a result of recent rationalization.

Rationalization

The industry has undergone rationalization, especially for slaughtering enterprises. In addition, firms have integrated or expanded processing and further processing activities through amalgamations, acquisitions or partnership and plant closures.

- In N.B., the Sussex Poultry plant closed in 1992; this was the case of an aging plant in an industry experiencing overcapacity and uncertainty.
- In Western Canada, many plants have been up-graded and now have state-of-the-art equipment.

The processing industry is rationalizing through integration both horizontally and vertically, in order to improve its competitive position vis-à-vis their U.S. counterparts, through better economies of scales.

By-product Processing

By-products could be edible (sausages, feet etc.) or inedible (pet food, mink feed, meals, etc.). Rendering plants usually process by-products from various food processors. A certain amount of edible rendering also occurs on site in the larger poultry processing plants. There are rendering plants carrying out by-product processing in most provinces.

Hauling Distance

Most hauling within 200 km distance but cross movement can be longer.

BC Superior Poultry = 90 km (less than 5%); United Poultry = 80 km (10%); Lilydale = 80 km

ALTA In Alberta, birds are shipped long distances to the plants. Producers ship up to about 160 km to the Edmonton Lilydale plant from the surrounding area. In some cases birds are shipped from Lethbridge area farms to Edmonton (over 500 km). In the recent past about 50% of new quota allocated has gone to the Peace River area in northern Alberta. Farmers ship birds to the processors in Wembley. Lilydale covers the cost of shipping from there to the Edmonton plant (about 450 km). Furthest distance: up to 500 km

Producers are paid FOB the plant, producer pays about \$0.015/kg (live weight) for transportation

SASK Plains Poultry = 500 km; Saskatoon Poultry = 200 km

MAN Granny's = 200 km furthest; Friendly Family Farms = 144 km furthest

- ONT Most Ontario broilers are transported less than 125 km from the farmgate to the processing plant
- QUE Furthest about 200 km
- NB Some moved from the Ottawa Valley and parts of Quebec (max. distance is about 10 hours on the truck); 600 km from PEI
- NS 85% of birds are close to processing facilities. For birds from NB, it is approx. 400 km; from PEI, 300 km
- PEI All broiler chicks raised in PEI are grown under contract and exported for processing by mainland plants (NS = 300 km; NB = 600 km)
- NFLD 100 km furthest (30% hauled on max. distance)

Research and Development

Research and development is usually conducted by the major companies/cooperatives, whether in-house or in cooperation with government and/or universities. Research activities are related to growing birds (genetics, feed etc.), packaging technology, to processing technology and the development of new/improved products (processed or further processed). The level of research and development activity is not equivalent across provinces.

B. Environmental Regulations

Farm Level

Regulations and guidelines regarding waste disposal are determined by the provincial governments.

Processing Level

Environmental issues relate to water use and waste water disposal/treatment; this is usually under the jurisdiction of the municipalities.

Agriculture Canada controls the movement of poultry waste, offals and feathers within the plant but has no control outside the plant facility. Rendering plant finished products are under the jurisdiction of Agriculture Canada Feeds Act only if the product is targeted for animal foodstuffs (pet and livestock feeds). Provincial government regulations or guidelines control offal disposal methods for smaller plants, not federally inspected.

TABLE 1 COMPARISON OF CHICKEN QUOTA ADMINISTRATION BY PROVINCIAL MARKETING BOARDS

	BC	AB	SK	MB	ON	PQ	NB	NS	PEI	NFLD
Ownership of Quota	Board	Board	Board	Board	Board	Board	Board	Producers	Board	Board
Trading Policy	Freely traded	Trough quota exchange/may split to children	Tied to farm unit	Tied to farm unit	Transferred with or without farm unit	Freely traded	Single quota can be split and sold with or without facilities	Tied to farm unit	Tied to farm unit	Reverts to Board
Quota Maximum	100,000 birds per cycle	1.25% of total provincial base	40,000 broilers per cycle	50,000 square feet per cycle	90,000 for family farm corporations and 45,000 units for any body else	11,150 square meters or 13,935 square meters for partnership	1 M kg 200,000 birds per cycle	44,000 square feet	500,000 kg eviscerated per year	60,000 broilers/cycle
Unregulated Production Maximum	200 birds per year for own home consumption	2,000 birds per year per land location	999 birds	1,000 birds per year per producer	No limit but must be used for family consumption	100 birds	200 birds	500 birds	500	100 birds
Allocation of Overbase	New entrants 10%	65% to present producers/35% to new producers in lots of 12,000 square feet	1/3 to new entrants; 1/3 to small farms; 1/3 to others	1/3 to new entrants; 1/3 to small farms; 1/3 to others	n/a	n/a	Regionally cut, then prorated	n/a	n/a	Developing policy
Quota Rental	Yes with farm -- \$0.30/bird	No	No	Yes	Yes; lessee must grow from leased premise	Yes	No provision but common in province	No/transfers allowed	No	No
Penalties for Over-production	Yes	Yes, \$0.35/kg over 105% and \$0.70/kg over 110%	Yes over 102% of provincially allocated on an annual basis	Yes	Yes 0.50¢/kg on production over 105 - 110%; 0.75¢/kg for production over 110%	Yes	Yes	Yes	Developing policy with producer responsibility	Yes on an annual basis
Penalties for Under-production	Yes	No but only 5% can be carried forward to be use in the following year	No	No	No	No; cannot reuse unused quota	Yes	No	No	No
Constraints on Regional Distribution	Yes	No	No	No	No	Yes/cannot rent between zones	Yes 50% - North 50% - South	No	No	Yes, East and West
Live Weight per Cycle	192,900 kg		71,000 kg	100,000 kg	1.638 kg for every unit of quota	185,000 kg	Annual Quota + 6 200,000 kg	104,000 kg	113,000 kg	106,000 kg

Source: Provincial Boards, 1993.

APPENDIX C

A. CANADIAN SUPPLY MANAGEMENT SYSTEM FOR CHICKENS

Canada's supply management system operates through a set of institutions which reflect the joint federal and provincial jurisdiction for marketing and pricing. In Canada, inter-provincial and international trade is a federal matter, while intra-provincial trade and pricing are provincial responsibilities. This section describes the Canadian supply management system as it affects production, pricing and marketing.

Subject to international trading obligations, federal government policies in supply management seek to achieve stability in the marketplace, while returning costs of production to producers and having due regard for the interests of the supply chain and consumers.

Supply management enables the level of domestic supply to be controlled through a combination of production quotas and system of import controls. The authority to control production is derived from The Farm Products Marketing Agencies Act of 1972 which provides for the creation of national agencies to administer the national production quota and the National Farm Products Marketing Council (NFPMC) to perform a supervisory function. Import controls are established by authority of the Export and Import Permits Act. The application of these two acts to manage supplies means that the provinces obtain border control in return for losing the right to determine levels of provincial production.

The broiler industry in Canada is directly affected by the supply management systems for chickens (instituted in 1979) and broiler hatching eggs (1986).

Production Quota

The Canadian Chicken Marketing Agency was set up through a unique federal-provincial agreement between participating provincial and federal governments, the provincial supervisory boards, the NFPMC, and the provincial marketing boards. The Agency is empowered to establish the national production quota level and enforce the collections of levies and monetary penalties. The provincial commodity boards set policies of quota allocation to producers and quota transfer between producers within their own provinces.

The operations of the Agency are funded by levies. Levies are monies collected from producers at rates determined by the Agency and provincial commodity boards to fund the administration and marketing programs of the Agency and provincial boards. This is an added cost in the Canadian broiler production system.

The management of the supply process begins with the establishment of the national annual quota, based on estimates of market needs. The national quota is then divided among the member provincial marketing boards, according to criteria agreed to in the marketing plan. The criterion of historical share is used to allocate base quota. The allowed numbers reflect average provincial

production shares during the five years prior to the introduction of supply management in that particular industry. Additional production quotas to satisfy growth in demand are allocated according to the following five criteria:

- (a) any significant change in consumer demand;
- (b) the ability of a province to meet its allocated production;
- (c) the total market requirements within each market area;
- (d) the proportion of market demand in a province which is met by production in that province; and
- (e) the comparative advantage of production and marketing of chicken.

Each provincial marketing board then allocates base quota to individual producers based on historical production but boards differ in the rules for allocating incremental quota.

Pricing and Marketing of Broilers

Pricing authority is in the provincial jurisdiction but provinces have generally delegated this authority to the provincial marketing boards. Boards in several provinces establish/negotiate a minimum producer price on the basis of provincial cost of production, provincial market conditions and the processor price in Ontario. In Ontario, Quebec and Alberta, the minimum price is negotiated between the Marketing Board and processor representatives. If an agreement is not reached, the two offers go to binding arbitration. Other provinces will continue to set their prices as before. The transaction price for individual growers could be higher than the negotiated price if processor demand is strong.

Ontario changed its marketing system effective September 1992 from one where producers were assigned by the Board to specific processors to one where producers will be free to sell to any processor, generally through a contractual arrangement. It is uncertain how this marketing arrangement will impact on prices, firm level rivalry, inter-provincial trade or supplementary imports. Producer expectations were for improved margins as reflected in the 25% increase in quota values in 1991 in anticipation of the change in the marketing system.

B. U.S. INTEGRATED SYSTEM FOR CHICKEN

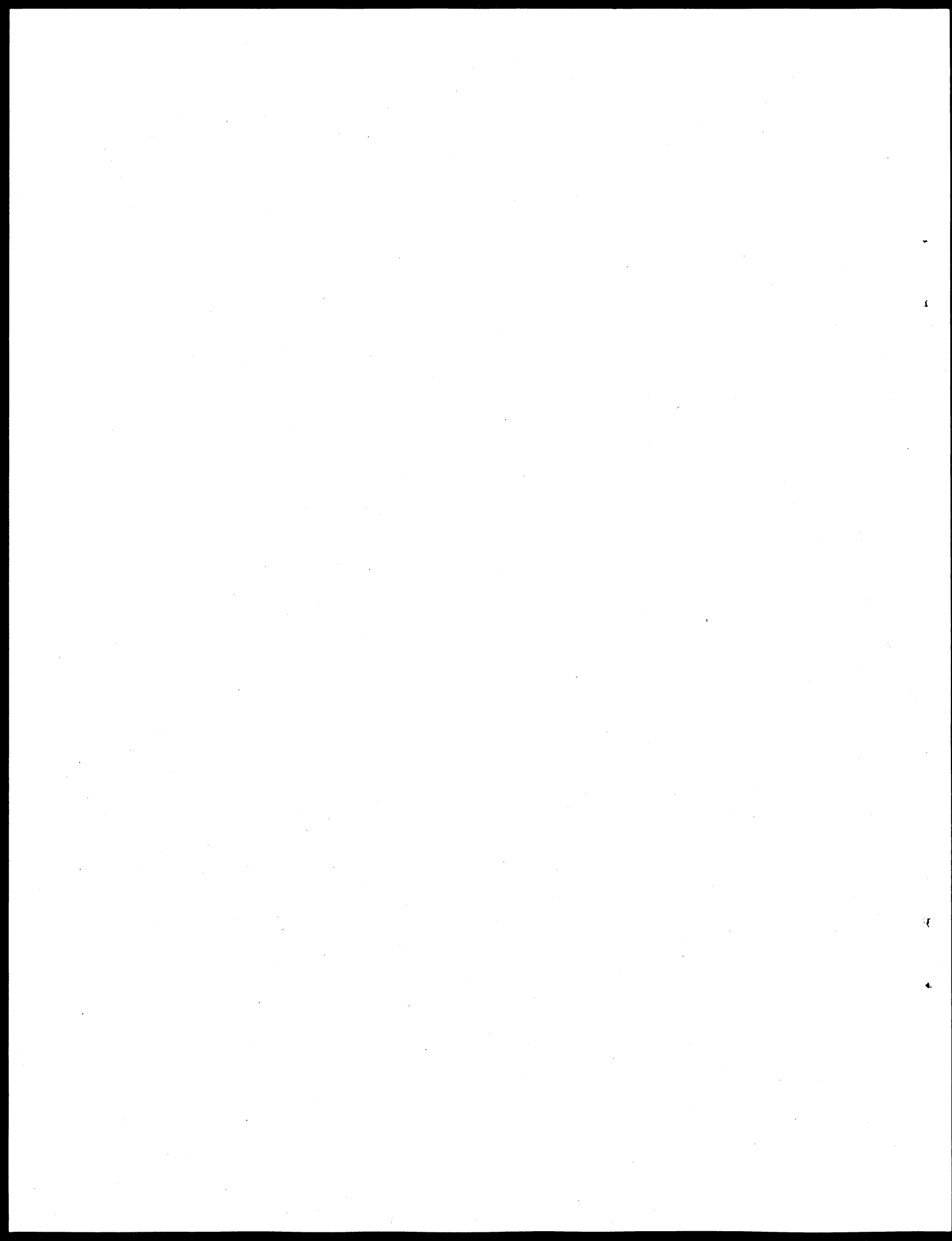
Vertical integration began for the U.S. poultry industry in the 1940s when feed mills on the Delmarva (Delaware, Maryland, and Virginia) peninsula, wishing to ensure a stable market for their feed, began to contract feed to broiler growers. With successful feed mill operations, the broiler industry began to integrate backward by acquiring hatchery operations. This action allowed the newly integrated firms to cover the farm production side of the business.

Poultry processing was considered part of the marketing sector and the newly integrated poultry firms moved into poultry processing in the late 1950s through the 1960s. Once the forward move toward processing was made, the wholesaling of the integrator's own brand name products followed. The merger of the production and the distribution stages completed the vertical integration of the broiler industry.

A typical integrated broiler operation, however, consists of a combination of most of the following stages; broiler egg hatcheries, feed mills, primary processing and further processing plants and contract broiler grow-out. The larger integrators may have basic breeding programs to produce hatching eggs for their own hatcheries. The capital intensive grow-out stage is generally controlled but not owned by the integrated corporation. (It is common to refer to a processor as an integrator to underscore their involvement in the entire broiler sector.) The integrator agrees to supply the grower with chicks, feed, medication and supervision and pay a flat per pound rate on broiler output. The grow-out stage represents about 50% of the total capital costs of a broiler firm integrated to the farm level.

The main advantage of having growers raise the chicks to market weight under contract is to reduce the capital needs of the integrator while still maintaining control of the total operation. Such integrator-grower contracts transfer a large part of the production and price risk from the grower to the integrator. The grower, on the other hand, loses the freedom to choose a buyer for his products since integrators prefer contracts that are within a radius of about 20 miles (32 kilometres) and almost never exceeding 50 miles (80 kilometres).

The integrated organizational structure of the broiler industry supports research and the adoption of new technologies to reduce costs and achieve economies of integration. The ability to control production from the hatching egg to the consumer's table may have helped to reduce the product market risks associated with price variability and market access.



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