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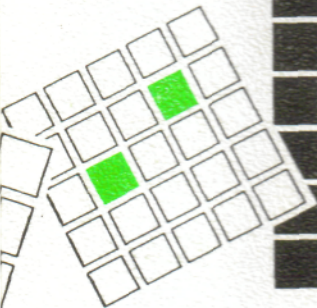
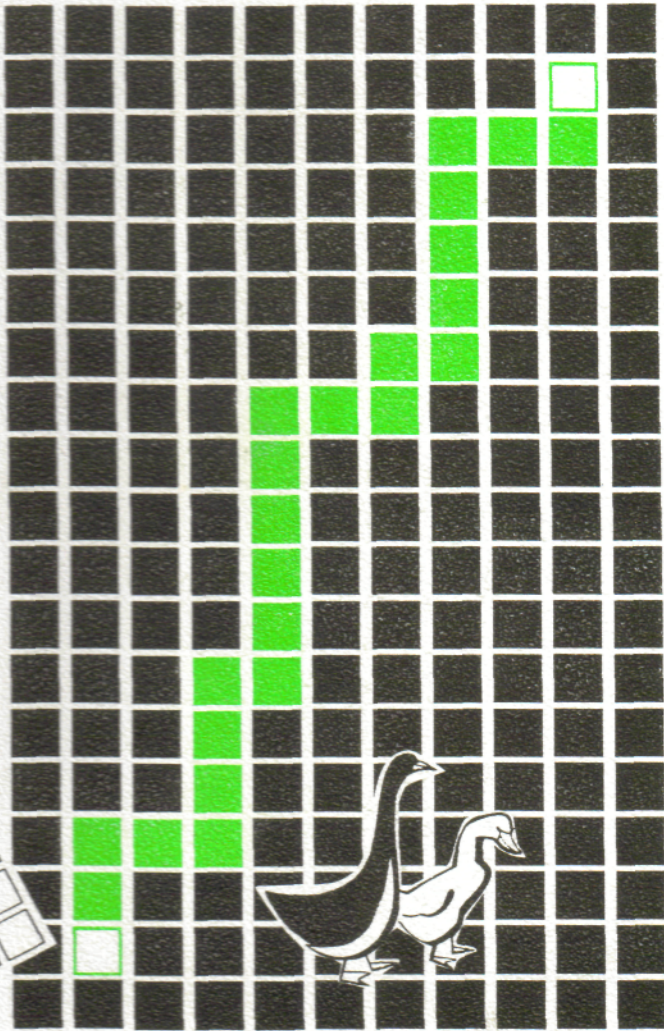
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# Farm &

# Businesses



Vol. 4, No. 2, January 2001

The Journal of the **Caribbean**  
**Agro-Economic**  
**Societv**

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# COMPETITIVENESS OF THE BROILER INDUSTRY IN TRINIDAD AND TOBAGO: PRE AND POST LIBERALIZATION

**Ranjit Singh**

*Senior Lecturer, The University of the West Indies*

**Govind Seepersad**

*M Phil. Student. Department of Agricultural Economics and Farm Management  
The University of the West Indies*

**Lloyd Rankine**

*Senior Lecturer. The University of the West Indies*

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## INTRODUCTION

This paper examines the broiler industry in Trinidad and Tobago with respect to its external competitiveness in an era of trade liberalization. Trinidad and Tobago initiated the GATT (Uruguay Round) in January 1995, commencing with the conversion of import restrictions to tariff equivalents (**tariffication**), followed by a period over which tariffs were to be reduced (**tariff reduction**) in accordance with the agreed GATT schedule. The broiler industry in Trinidad and Tobago has traditionally been protected from external competition and historically has been the recipient of significant amounts of subsidy. Given the importance of broiler meat in Trinidad and Tobago (that is, it is the major protein source) and the potential impact of economic and trade liberalization on the industry since liberalization in January 1995. The analysis also includes a comparison with the results of a prior study on competitiveness which was undertaken

by the authors in 1994, before initiation of new trade policies. The paper concludes with an attempt to identify the major sources of change that were likely to have an impact on the market for broilers in Trinidad and Tobago and the competitiveness of the industry.

## **BACKGROUND: Structure and Trends in the Global Broiler Market Pre-Liberalization**

### **World Meat Production**

Slow growth in world meat production (beef and veal, pork and poultry) was observed since 1989 which continued in the early 1990s. During 1989 to 1991, world meat output grew by less than 1% per annum, which is less than the rate of increase during the 1980s (over 2% per annum). For the years 1994, 1995 and 1996, the rates of growth in production were 7.1%, 4.5% and 3.2% respectively. Underlying this trend with respect to meats in general is the rapid expansion of poultry meat on one hand

and relatively small increases in output of beef and pork on the other (Appendix Table A.1, Figure 1).

Poultry meat holds the smallest share of the total meat output, accounting for approximately 25% of the world meat production but continues to show more rapid increases in production, surpassing that of pork and beef. Pork has the largest share of the total meat output (> 40%) with increases in output exceeding that for beef, mutton and chevron.

### **The Poultry Meat Market**

World poultry meat production increased gradually from 26,439 m kg in 1979 - 81 to 39,862 m kg in 1990, an increase of approximately 50% over the 10-year period. World production however declined over the 1990/91 period from 39,862 m kg to 42,125 m kg. Thereafter, the increases in production have been more dramatic. Over the 1991 to 1996 period, an increase of about 50% was recorded.

The expansion and development of the poultry industry throughout the world has been driven by the substitution process in meat consumption that has been taking place, especially in the major producing countries

The major areas of growth in poultry meat production are the United States, Asia (particularly Thailand and China) and Brazil. Altogether, these three account for approximately three-quarters of the world poultry meat production. World poultry meat production has traditionally been dominated by the United States. Over the past decade, the United States produced an average of 25-27% of the

total world production. The EC followed with about 15-17% of world production of poultry meat (Appendix, Table A.2 and Figure 2).

### **Trade in Poultry Meat**

The United States, the EC, Brazil, Hungary and Thailand are the leading exporters in the poultry market. Over the period 1989 to 1991, poultry meat exports increased by 16%, from 2,357m kg in 1989 to 2,737m kg in 1991. Exports declined to 2,247m kg in 1992, while in 1993, the world exports of poultry meat increased by 5.3 %. Since then the export market has been particularly buoyant with recorded increases of 50.5%, 25.7% and 10.7% for the 1994, 1995 and 1996 years (Table 1).

In 1993, the United States exported approximately 38% of total exports of poultry meat, followed by the EC which exported 24% of the total exports. Since then, the United States share in exports has been increasing steadily; 42% in 1994, 45% in 1995 and 48% in 1996.

### ***United States - A Major Poultry Producer***

The United States contributes about one quarter of the world supply of poultry meat, thus making it the largest poultry producer in the world (Figure 2). Since 1950, the production of poultry meat in the United States has expanded almost annually and, is expected to continue expansion over the medium-term. This expansion has been stimulated by the increases in the demand for poultry meat of 5 to 6% annually. Broiler production accounts for four-fifths of the

poultry meat produced in the United States.

The Export Enhancement Programme (EEP) in the United States provides support to the poultry industry in the form of subsidies for exports. About 70% of the United States poultry exports consist of broiler parts, such as chicken breast and drumsticks.

Broiler exports from the United States grew by about 22% in 1992, 17% in 1993, 71% in 1994, 34% in 1995 and 16% in 1996. The major export destination was Hong Kong, which absorbed over 40% of the poultry exports in 1993. Other export destinations included Poland, Romania, Russia, China and Mexico.

### **Consumption of Poultry Meat**

Over the past two decades, total meat consumption has increased at a much faster rate in developing countries than in the industrialized countries. With respect to poultry meat, there is an upward trend in the consumption pattern. Per capita poultry meat consumption by income groups globally is shown in Appendix Table A3 and Figure 3.

The data reflect a steady increase in poultry meat consumption in the high income and upper middle income countries over the years 1961 to 1989. In the United States, per capita consumption of chicken increased by over 85% between 1970 and 1991 (Appendix Table A.4).

In the lower middle income countries and the low-income countries, per capita poultry meat consumption, although increasing, still remains very low relative to the high income and upper middle income countries.

The changes in the consumption pattern for poultry meat has been influenced by the lower prices relative to other meats. This has resulted principally as a result of vertical integration and developments in the processing and distributing sectors of the industry.

The World Bank in its Market Outlook for Major Primary Commodities, commented on the relative US prices as follows (1992, Pg. 174):

*"In the United States, retail prices for whole chicken were about one half those of weighted average of all choice cuts of beef. Whole chicken prices in 1991 were about 31 % of the average composite price "*

With respect to factors influencing consumption, one of the most important factors influencing the demand for poultry meat is income. Generally, as income increases demand will increase but only up to a certain income level. Thereafter, consumption tends to stabilize and then declines at the highest incomes. Other factors influencing consumption include demographic characteristics, health consciousness and ethnic background.

### **DEVELOPMENT OF THE BROILER INDUSTRY IN TRINIDAD AND TOBAGO**

#### **Historical Performance**

The poultry sub-sector has generally been regarded as the most successful of the livestock industries in Trinidad and Tobago because of its high capital investment, contribution to Gross

Domestic Product, employment of labour and satisfaction of the domestic demand for broiler meat. The industry started on a small scale in the early 1950s and gained momentum in the late fifties and sixties with the establishment of feed mills and specialized broiler producing units. This rapid rate of expansion in broiler meat production was stimulated by the significant levels of subsidy and fiscal support to the industry. The amount of broiler meat produced increased steadily over the period, from 13.9m kg in 1969 to 37.5m kg in 1982 (Figure 4). However, production declined in the latter part of the 1980s as a result of declining incomes of producers and changes in the industry. By 1992, production had declined to a minimum of 24.6 m kg, but has shown improved performance in subsequent years. However there has been a reduction in the number of commercial farms.

### **Structure**

The broiler industry in Trinidad and Tobago has one leader controlling about 52% of the market (measured in output of birds) and two major followers, each controlling about 15% of the market. The other industry followers share the remaining 18% of the market. The industry's leader is fully integrated, operating the following businesses: shipping of feed inputs, feed milling, breeder farm operation, hatchery-operation, veterinary supply imports, contract farming, own-farm production operations, processing, wholesaling and serving as the major supplier of processed birds to fast-food outlets, hotels, restaurants and supermarket chains. The industry's followers are less integrated. There are two types of

commercial broiler producers in the industry:

- (i) contractors and contract farmers, and (ii) independent farmers.

### **Markets**

Generally, contractors are also processors and in the past they processed all their birds, that is, broilers produced by themselves as well as that which was contracted to growers. However, in recent years contractors have been selling some of their birds in the live-bird pluck shop market.

Independent farmers dispose of their production through a number of channels: live-bird sales to pluck shops, live-bird sales directly to consumers, engage in their own processing/plucking and sales. They purchase all the required inputs for production. The industry's structure has been changing, becoming more vertically integrated. For example, the share of total broiler grown by contractors has increased from 60% in 1991 to 92% in 1995 and intermediaries have been replaced by contractors supplying birds directly to pluck shops.

### **Consumption Patterns**

The sales volume by pluck shop operators (live birds) *vis-a-vis* sales by large scale processors (frozen) in Trinidad and Tobago varied annually: 37%:63% in 1985 and 65%:35% in 1990. Within recent years (1994 to 1996), the relative share averaged 56%:44% respectively. Per capita consumption increased from 20 kg in 1992 to 25 kg in 1996. As indicated,

poultry meat produced in the United States.

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consumption requirements are met entirely from domestic production.

### **ECONOMIC AND TRADE POLICY REFORM IN TRINIDAD AND TOBAGO**

Recent policy reform in Trinidad and Tobago is linked to the Structural Adjustment Programme (SAP) which commenced around 1989 and the Uruguay Round (UR) GATT Agreement which came into effect on January 1st, 1995. These were generally anticipated to have a profound effect on the agricultural sector and the economy and the country.

The SAP included both macroeconomic reform as well as sectoral. In the case of the former, policy changes included exchange rate liberalization, interest rate, trade reform, fiscal and institutional reform. The first three of these were expected to have direct impact on prices; for the others more indirect effects were expected. With respect to trade policy reform, implementation was proposed on a phased basis.

Under **The Uruguay Round GATT Agreement** (UR), the domestic broiler industry would be exposed to competition from external supplies, primarily the United States in the medium to long term. Our interest in the UR agreement is with respect to:

- i) the removal of QRs (tariffication) initially to be followed by tariff reduction
- ii) impact of changes on world grain prices and as a consequence on production cost and competitiveness of broilers

Additionally, the UR agreement requires that countries reduce their subsidies to

agriculture. CARICOM countries have generally dismantled their subsidies to agriculture and this item therefore would not have an impact on competitiveness.

### ***Specific Trade Policy Measures for Broiler in Trinidad and Tobago***

Prior to January 1st 1995, import of broiler meat into Trinidad and Tobago was prohibited. However, as of the above date, Government removed whole broilers from the negative list and substituted it with a tariff structure.

The tariff comprised the Common External Tariff for Caricom (GET) which was set at a level of 40% for agricultural commodities and was to remain in force until that time when it is reviewed by CARICOM. An Import Surcharge (IS) was used by Trinidad and Tobago as an additional buffer for the short-term protection of the domestic broiler industry. However, the surcharge was to be phased out over a 4-year period 1995 - 1998 Table 2 shows the schedule for the reduction of the import surcharge from 15% in 1995 to 0% in 1998. However, it should be noted that the actual surcharge was 20 % in 1995 which is to be reduced to 5% in 1998

Chicken parts were supposed to remain on the negative list over the short-term. However, this was replaced by a tariff structure in 1996, comprising a GET of 40% and an Import Surcharge of 105%.

### **COMPETITIVENESS OF THE BROILER INDUSTRY: PRE- LIBERALIZATION**

As indicated earlier, the authors of this paper conducted a study on the competitiveness of the broiler industry in

1994. The study also forecasted the potential impact of the short to medium term policy initiatives, according to the GAIT agreement on the market for broiler meat in Trinidad and Tobago. Some of the findings are presented in brief to allow for a comparison with the results of the analyses of competitiveness conducted for this paper with respect to the years 1995, 1996 and 1997.

The 1994 study (Singh *et al.*, estimated external competitiveness using the following three measures:

- (i) The Nominal Protection Coefficient (NPC)
- (ii) The Effective Protection Coefficient (EPC) and the
- (iii) The Domestic Resource Cost Coefficient (DRC).

### **Nominal Protection**

The nominal protection coefficient (NPC), defined as the ratio of private commodity prices to social commodity prices, which in the case of broilers was the import parity prices, evaluates the net impact of government policy (or, of market failures that are not corrected by efficient policy) for tradable commodities.

With respect to fresh chicken i.e. broilers sold by pluck shops (live birds), the 1994 study reported that this marketing outlet was competitive relative to the price of imports at the same point, that is, the 'cif plus' or border price. Fresh whole broilers at pluck shops were in a particularly strong position, in that the estimated border price of competing imports ex USA was more than 20% higher (Table 3). This is generally as a result of the relatively low

processing and handling cost associated with pluck shop operations.

Frozen chicken retailed at the pluck shop is not widespread. However, even in such a case the NPC was 0.94 reflecting a competitive wedge of about 6% over potential imports. With respect to frozen whole broilers distributed by large-scale processors and marketed through the supermarkets, the study indicated that the prevailing price resulted in an NPC of 1.10, suggesting that the negative listing of imports of broiler meat in 1994 afforded this marketing channel, the necessary protection (10%). Given that the industry is largely dominated (about 60% of market share) by processed birds from the large-scale processors, the study concluded that overall the industry received a moderate level of protection.

The study also assessed the competitiveness of broiler parts namely:

- breast (bone-in)
- whole legs
- breast (boneless)

These were supplied only by large scale processors through the supermarkets and meat shops. The estimated NPCs for the various parts indicated that all parts listed except boneless breast and back and neck enjoyed a significant level of protection from competing imports as a result of the negative list (Table 4). For breast meat (ribs on), the retail price was 26% above its border equivalent; for whole legs 67% above; for wings 15% above. With respect to boneless chicken breast, the strong demand for this product in the U.S. market (due to preferences and health reasons) relative to the local demand has meant a much lower domestic price

than the border price. Accordingly, this product was in a strong competitive position. With respect to back and neck the domestic retail price was significantly below the average cif price for imports into the Caribbean from the USA.

The study concluded that the price levels for chicken parts generally reflected consumer preferences and demand which in all cases, except for back and neck and boneless breast were significantly above their border prices. In the absence of import restriction, those prices clearly could not be maintained. Consumers in the industry were therefore implicitly being taxed with the benefits accruing principally to the large processors.

#### **Effective Protection Coefficient**

Government pricing policy often affects the prices not only of final goods but also of the inputs into production. Where significant market distortions may also exist for inputs, the NPCs may not reveal the true extent to which domestic production is competitive with imports. In such circumstances, the **Effective Protection Coefficient (EPC)** is a more appropriate measure since it is potentially a more encompassing assessment of the protective structure of intervention.

The study conducted by Singh *et al.* (1995) indicated that both contract and non-contract producers could have received a greater return on their resources if they faced border prices instead of domestic prices on both output and inputs (Table 5). The EPCs suggested that broiler production in Trinidad and Tobago at the primary level is highly efficient and competitive

producers have 'mastered' the technology.

#### **Domestic Resource Cost Coefficient (DRC)**

The Domestic Resource Cost Coefficient (DRC) measures the relative efficiency or comparative advantage of production (that is, domestic production vis-a-vis imports) and have implications for incentives. The information content of coefficients of protection and coefficients of comparative advantage is complementary because policy-making combines considerations of both incentives and efficiency.

The Singh *et al.* (1995) study indicated that in 1994, Trinidad and Tobago had a comparative advantage in producing broiler as indicated in Table 6.

#### **POST- LIBERALIZATION CHANGES**

As indicated earlier, analyses conducted for the current paper evaluated external competitiveness of the broiler industry for the years 1995, 1996 and 1997. The analysis was limited to a computation of only the DRCS. Both whole broilers as well as chicken parts were evaluated. The NPCs were estimated with respect to the retail level at the pluck shops and supermarkets. The source of supply for the latter is the large scale processors

With respect to whole broilers at the supermarket outlets (mostly frozen) and distributed by large-scale processors, the NPC was 0.87 in 1995, suggesting a good competitive position against potential imports ex USA (Table 7). Accordingly, the GET and import surcharge (IS) which applied to imports of whole birds during 1995 was

unnecessary since this marketing channel was competitive. However, in 1996 and the first half of 1997, producers for this market would not have been competitive in a free-trade environment given NPCs of 1.07 and 1.06 for the respective years. The combined protection afforded by the GET and IS of 55% prevailing in 1996 and 50% in 1997 was more than adequate to provide the necessary protection to the industry.

With respect to live or fresh whole chicken processed by pluck shops and retailed at these outlets, the prevailing prices (1995 - 97) reflected a strongly competitive market relative to the price of imports at the same point, that is, the 'c.i.f. plus' or border price. As in the pre-liberalization period, fresh chicken remained in a particularly strong position in that the estimated border price of competing imports ex USA is more than 16% higher. This is generally as a result of the relatively low processing and handling cost.

The estimated NPCs for broiler parts (Table 8) indicated that (as was the case prior to liberalization), boneless breast did not effectively enjoy any level of protection from competing imports through the GET and IS. For boneless breast meat, the retail price was 5% lower than its border equivalent in 1995; 11% lower in 1996 and 22% lower in 1997. This increase in competitiveness has been principally due to large price increases in the United States market. However, breast meat (rib on) continues to receive moderate levels of protection (Table 8) post liberalization, requiring protection from imports at the level of 17% in 1995, 26% in 1996 and 7% in 1997. The combined protection of GET and IS of 145% in 1996 and 1997 was

more than adequate to provide the necessary protection.

Alternatively, the domestic price for whole leg was significantly above the average import parity price for imports from the USA. This commodity received significant levels of protection from the GET and IS: 52% in 1995, 69% in 1996 and 91% in 1997. However, the tariff protection measures were significantly high to allow for relief from competing imports.

In summary, these results indicate as follows:

- Whole broilers (fresh) and retailed by the pluck shops continue to enjoy a strongly competitive position in the post liberalization period.
- Whole broilers (frozen), retailed by the supermarkets and supplied by the large-scale processors showed an improvement in competitiveness in the post liberalization period but generally (except for 1995) enjoyed domestic prices which were not competitive with competing imports.
- With respect to chicken parts, boneless breast continues to be strongly competitive in the post liberalization period. In the case of breast (ribs on) and legs (whole), these continue to receive significant protection from potential imports through the operating tariff regime. Whole legs are particularly weak with domestic prices ranging from 55% to 95% above the import parity prices.
- The above situation with respect to the competitiveness of chicken parts largely reflects the relatively strong demand for white broiler meat in the USA and the relatively

strong demand for legs (darker meat) in Trinidad and Tobago.

## DISCUSSION

Underlying the results reported in the previous section are the movements in key variables which could influence competitiveness. These include:

- i) imported raw material for feed manufacturing, namely corn and soybean meal, which together could account for as much as 80% of cost
- ii) the exchange rate for the TT dollar
- lii) the price of baby chicks

The data presented in the Appendix indicate the following changes in the above variables over the period 1994-97.

The estimated impact of increases in the price of corn, soybean meal and the exchange rate on the cost of production of broiler feed was 25.8 %, of which 24.4% was due to increases in ingredient cost and 1.4% due to the exchange rate movement. This compares with a movement in the average domestic price of feed from \$81.60 to \$99.32 per 45 kg bag, an increase of 22%. Accordingly, these results suggest that feed millers absorbed part of the cost increases related to higher ingredient cost and movements in the exchange rate.

The combined increases in the major cost items related to broiler production (feed, baby chicks) were estimated to result in an increase in the cost of production for broilers of about

26%. Interestingly, this compares with the following actual increases in market prices: 33.8% for whole (frozen) broilers at the supermarket supplied by the large-scale processors; 18% at the pluck shops; and 13.3% fob ex USA.

These results therefore suggest that large-scale processors have increased prices of their broilers well in excess (8% higher) of the estimated increases in the cost of production, whereas pluck shop operators have kept their broiler prices 7.7% below the estimated increase.

Generally these findings conform with observations in the industry whereby many pluck shop operators are claiming that their margin is now reduced to their returns derived from the processing charge.

The data is also interesting in that it shows that the price increase for whole broilers ex USA (Georgia dock) was 13.3%, which was well below the 22% increase due to changes in ingredient costs. One may therefore conclude that there is a structural shift in the broiler industry in Trinidad and Tobago with significant price discrimination between the pluck shop marketing channel and the supermarket (large processor), with the former experiencing significant reduction in returns while the latter is ensuring greater than average return. It also explains why the pluck shop segment of the market continues to be robust and competitive, whereas the channels of the large scale processor are uncompetitive - a situation which would prevail as long as the short term tariff measures are in force.

**Table 1 : Poultry Meat Exports by Selected Countries**

Countries	1992	1993	1994	1995	1996
United States	772	901	1540	2070	2400
EC	519	567	660	840	790
Countries	1992	1993	500	440	540
United States	772	901	180	190	180
WORLD	2247	2366	3610	4540	5030

Source: GATT, *The International Market for Meat 1993-1994*:  
FAO: *Commodity Market Review 1996-7*

**Table 2: Trade Policy and Tariff Levels for Broiler in Trinidad 1995-1998**

	GET	Surcharge 1995(%)	Surcharge 1996(%)	Surcharge 1997 (%)	Surcharge 1998 (%)	
Measures	Whole	40				
Proposed - Pre- Liberalization	Chicken Parts	40	15	10	5 INL	0 INL 5
Revised	Whole	40	INL	INL	10	105?
Measures	Chicken Parts					
Trade Policy Pre- Liberalization	ail broiler on import Negative List		20	15	105	
			INL	105		

INL=import negative list

**Table 3: Nominal Protection Coefficients (NPC) for Whole Broilers  
- (Trinidad & Tobago 1994)**

<b>Point of NPC Calculation Retail Level</b>	<b>NPC</b>
(a) Pluck Shop Fresh Chicken Frozen Chicken	0.79
(b) Supermarket (Supplied by large- scale processors)	0.94 1.10

*Source: Singh, et al. (1995)*

**Table 4: Nominal Protection Coefficient - Broiler Parts  
(Trinidad and Tobago 1994/95)**

<b>Part</b>	<b>NPC (Retail Level)</b>
Breast (bone less)	0.69
Breast (ribs on)	1.26
Whole Leg	1.67
Back and Neck	0.40
Wings	1.15

*Source Singh, et al (1995)*

**Table 5: EPC for various size farms in Trinidad and Tobago**

<b>Farm Model</b>	<b>EPC</b>
Small contract farm	0.78
Large non-contract farm	0.63

*Source Singh, et al (1995);*

**Table 6: DRC for Various Sized Broiler Farms in Trinidad and Tobago**

<b>Farm Model</b>	<b>DRC</b>
Small contract farm	0.82
Large non-contract farm	0.72

Source: *Singh, et al (1995)*

**Table 7: Nominal Protection Coefficient - Whole Bird at the Retail Level**

	<b>1995</b>	<b>1996</b>	<b>1997</b>
Live (fresh) whole Broilers at Pluck Shops	0.85	0.79	0.83
Whole Broilers (frozen) at Supermarkets (supplied by large- scale processors)	0.87	1.07	1.06

**Table 8: Nominal Protection Coefficient for Broiler Parts: 1995 -1997**

	<b>1995</b>	<b>1996</b>	<b>1997</b>
Breast (boneless)	0.95	0.89	0.78
Breast (ribs on)	1.17	1.26	1.07
Whole Legs	1.52	1.66	1.95



**Table 9: Change in Feed Input Cost and Exchange Rate: 1994-97**

	<b>% change 1994-1997</b>
Fob Price of Corn	14(41)*
Fob Price of Soybean Meal	24
Price of baby chicks (TT)	37
Official Exchange Rate (TT \$ to US \$)	5.7

\* This was the increase between 1994 and 1996.

**Table 10: Increases in Whole Broiler Prices 1994 : 1997**

	<b>Percentage <u>Increase in Prices</u></b>
Domestic Pluck Shop	18.0
Supermarket (large scale processor)	33.8
U.S.A. fob Georgia Dock	13.3

## APPENDICES

**Table A.1 World Meat Production (Million Tonnes)**

Type of Meat	Level of Production				
	1992	1993	1994	1995	1996
Pork	72.7	73.2	78.5	83.0	86.4
Beef	53.4	52.9	55.2	55.9	56.5
Poultry Meat	44.6	46.3	51.2	55.0	58.3
Mutton & Chevron	9.9	9.8	10.4	10.4	10.7
Others	3.6	3.6	3.6	0	2
<b>TOTAL</b>	<b>184.0</b>	<b>185.8</b>	<b>199.0</b>	<b>208.2</b>	<b>215.9</b>

Source: GATT, The International Markets for Meat 1993-1994

**Table A.2: Poultry Meat Production In Selected Countries (000 Tonnes)**

Country	1991	1992	1993	1994	1995	1996
United States	11476	11885	12390	13200	13800	14800
EC	6500	6063	7033	7200	7000	8000
Brazil	2663	2870	3140	3600	3900	3900
Others*	21486	22882	23738	27200	29500	31600
World	42125	44600	46300	51200	55000	58300

\* Others include China, FSU, Eastern Europe, Japan, Thailand etc.

**Table A.3: World Average Per Capita Consumption of Poultry Meat by Income Groups -1961-1989 (kg/person)**

Income	1961- 63	1964- '66 <sup>74</sup>	1969- 74	1972- 74	1974- 76	1976- 79- 91	1979- 76 91	1982- 78 84	1984- 86	; 1987- 89
High Income Countries	8.80	10.21	12.77	14.25	14.65	15.87	17.87	19.04	20.09	22.
Upper Middle Income Countries	3.20	3.21	4.64	5.63	6.20	7.07	9.14	10.22	10.59	11.89
Low Income Countries	0.77	0.80	0.84	0.89	0.93	0.99	1.16	1.36	1.47	1.69

Source: World Bank "Market Outlook for Major Primary Commodities." Vol II Oct 1992

**Table A.4 US Per Capita Consumption of Poultry Meat**

Year	Chicken	Turkey
1966	2.86	
1970	2.90	
1976	3.26	
1980	3.76	
1987	5.49	
1989	6.17	
1990	6.58	
1991	6.80	
	11.11	
	12.56	
	13.29	
	15.56	
	19.69	
	21.45	
	22.41	
	23.45	

**Table A.5 Broiler Price Data for Trinidad and Tobago**

Item	Value
FOB (ex USA)	US\$1. 19/kg (adjusted USDA wholesale price)
GIF Price (Est.)	TT \$8.5824
Retail Price of fresh chicken	TT \$9.72 TT
Retail Price of frozen chicken (supermarket)	\$13.49
Retail Price of frozen chicken (pluck shop)	TTS11.55
Weighted average price of whole birds	TTS10.82

**Table A.6 Exchange Rate, Poultry Feed and Baby Chicks Prices**

Year	1993	1994	1995	1996	
Exchange Rate	5.389	5.924	5.948	6.040	6.280
Price of poultry	74.55	81.60	82.27	92.00	99.32
Price of Baby	2.05	2.05	2.48	2.80	2.80

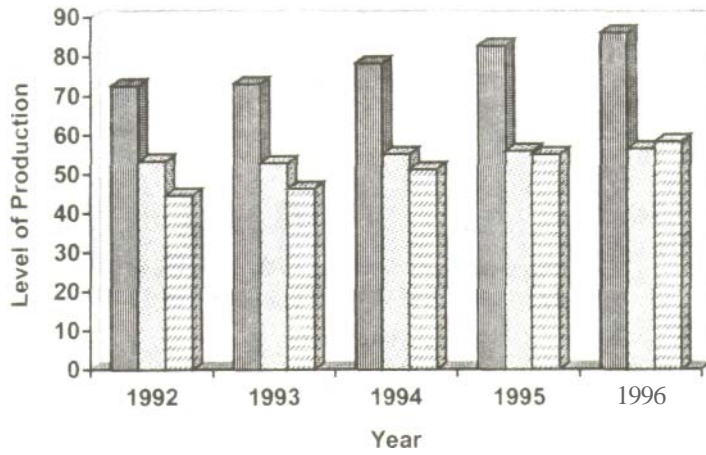
**Table A.7 International Prices - Corn and Soybean**

Year	1992/93	1993/94	1994/95	1995/96	1996/97	104.0	159.0	129.0**
Price of Maize U.S. No. 2 Yellow *\$US/Ton	97.0		113.0			221.0	273.0	314.0**
Price of Soybeans U.S. No. 2 Yellow \$US/Ton		220.0	254.0					

"Delivered U.S. Gulf Ports

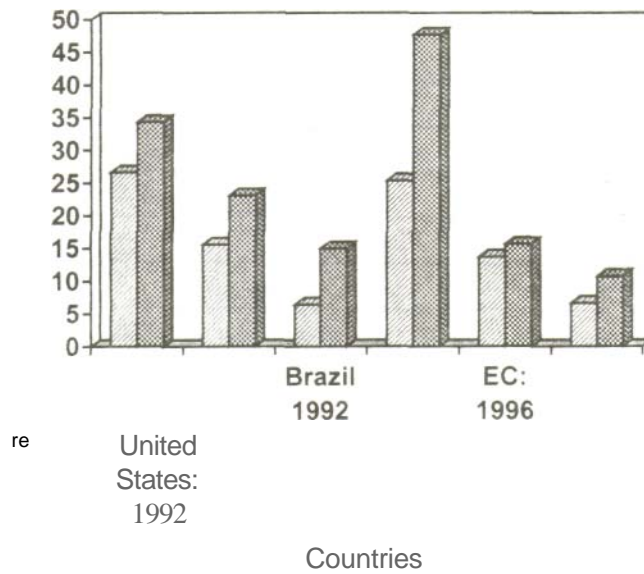
\*\* First Quarter

Source: International Grain Council, USDA and Reuters. Food Outlook, March/April 1997



• Pork QBeef E3 Poultry

Figure 1: World Beef, Pork and Poultry Production: 1992-1996



0 % Share of World Production 13 % Share of Export

Figure 2: Share of World Production and Export in Broiler Meat for Major Producers

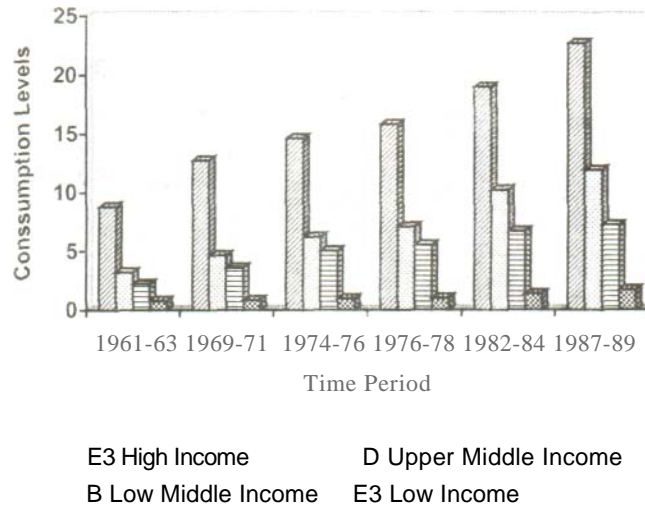


Figure 3: Average Per Capita Consumption of Poultry Meat by Income Groups

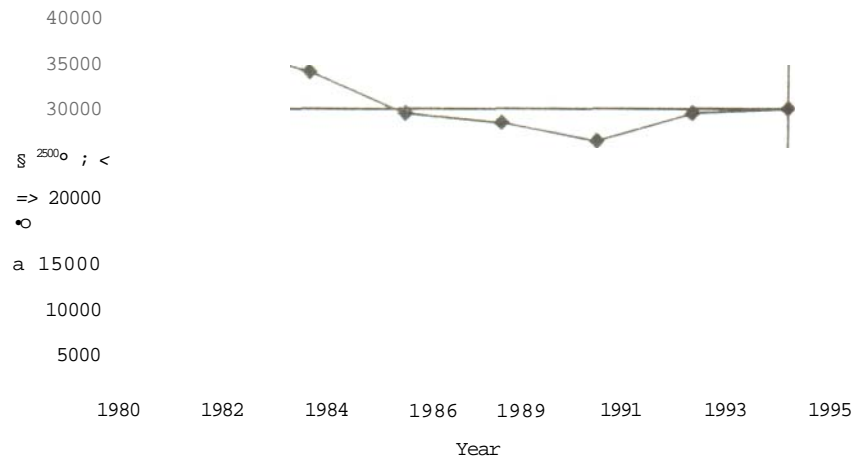


Figure 4: Production of Broiler Meat in Trinidad and Tobago