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## BACKGROUND PAPER

# MARKETING DISTRIBUTION SYSTEMS AND ANALYSIS OF MARKETING MARGINS FOR MAJOR AGRICULTURAL COMMODITIES IN JAMAICA

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## Background Report 4

### Marketing Distribution Systems and Analysis of Marketing Margins

#### 1. Introduction

The objective of this report is to provide information that can be used to link producer, retail, export, and import prices. The marketing systems for agricultural commodities in Jamaica are diverse, ranging from higglers to parastatals. In addition to estimated margin or price relationships, the report will include descriptions of the marketing systems for the different crops and commodities. The description of the marketing systems will be organized by export corps, fruits and vegetables, livestock products, grains and oils. The descriptive analysis will include reviews of available studies on marketing systems and analyses of available data to suggest similarity in price movements.

Following the institutional analysis, estimates of relationships between the prices at different levels of the marketing chain will be made. The farm to retail price margins will be necessary in the policy models for linking consumption and production and for obtaining equilibrium relationships between supply and demand for major agricultural commodities.

The relationships of retail and farm to export and import prices will be necessary for evaluating price distortions, protectionism, and effects of other interventions on supply and distribution systems for major agricultural commodities.

## 2. Export Crop Marketing Systems

The marketing of the traditional agricultural export commodities (sugar, banana, coffee, cocoa, citrus, pimento and coconuts) is undertaken by set of parastatal organizations who act as both the chief, and in most cases the only, buyer at the farmgate and seller to the rest of the world. The marketing boards in export crop industry were instituted after World War II in the early 1950's with the exception of sugar which was established in 1969. These boards have been responsible for administering and stabilizing the prices received by farmers, and expanding the industry through development of research and extension programs. Additionally, each crop line has a farmer organization that represents the growers interest. However, the strength of these organizations in obtaining benefits (in the form of higher farm prices and or subsidies) varies widely across crop lines. The All Island Cane Farmers Association is the most outspoken and vocal of all the organizations and appears to have some power in affecting the price paid to cane farmers (as will be noted below). The other grower associations provide more of a liason and information activity between the boards and the growers and also directly facilitate the orderly marketing of the crop through aiding in collection and payment for the crop.

For the most part, the marketing channels in each commodity line are organized along the following general pattern. Farmers are responsible for harvesting of the crop and transporting it to either an established collection station or directly to the processing plant. This is an important aspect of all these crops is that some amount of "processing" is required before export can occur. In the case of coffee, growers are organized by the Jamaican Agricultural Society (JAS) into cooperative societies. These societies are responsible for collection and transportation of the raw product to processing facilities and also handle payments from the boards to the farmers. This is particularly beneficial to the board since two payments must be made to each farmer. An initial payment, which is announced at the beginning of the crop year, is paid at the actual time of delivery and an additional payment, a bonus, is paid when the board realizes its export sale. The size of the bonus depends on the prevailing world price, exchange rate and costs incurred by the board. In the case of bananas, farmers must transport their product to boxing stations set up by the board. Traditionally, the farmer receives payment only for bananas that are judged to be fit for export. Bananas that are rejected have to be taken back to the farm at the farmers' expense or, usually, are simply discarded at the boxing station. For citrus fruits, quality fruit is accepted for export as fresh and that which is rejected is used to produce fresh juice, concentrates and other processed products.

The finished export commodity is sold abroad to well established markets usually under long standing commodity agreements. Jamaica's traditional outlet has been the United Kingdom. Currently, Jamaica has special commodity agreements with the EEC for sugar and with the U.K. for bananas (both price and quantity benefits). In the case of coffee, almost all Jamaican coffee is exported to Japan to a processor there who is willing to pay a premium to get Jamaican coffee. Similarly, Jamaican cocoa is also able to fetch a premium price on the world market. Hence, Jamaican exporters appear to be insulated from world prices determined in the "free market".

#### **2a. Price Determination and Board Objectives**

The literature (Hoos, Brown) also suggests that parastatal marketing organizations may have additional objectives that are not explicitly stated such as: maximization of foreign exchange earnings; and maximization of own profits (i.e. to increase board member salaries and benefits). What largely determines if boards are able to meet stated and/or implicit objectives is how the prices that these boards pay to the farmer are set. These boards are government statutory bodies and hence, government is involved in the determination of prices. However, the extent of government participation varies across crops. For sugar, banana and coconuts, government is actively involved, while in the case of coffee and cocoa price setting is left up to board officers.

The impact and influence of alternative criteria, than that stated by these boards, and the role of prices paid to farmers

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have been well documented in Jamaica. Goldsmith examined the impact of marketing board behavior on small farmer production. Goldsmith concluded that the boards, through the setting of low farmgate prices and incurring high costs of operations, have given disincentives to the farmers in these crop lines that has resulted in less production being available for export and diverted output of these crops to the domestic markets. Pollard and Graham, using a different methodology, come to a similar conclusion. They attempt to uncover, for each board, the most important objective (explicit or implicit) that governs the board's behavior in determining the farm price paid. They find that export crop farmers have indeed been implicitly taxed by the boards' pricing policy; that farmers do respond positively to relative price changes (as was presented in Background Paper 3); that prices at the farmgate level have fluctuated less than the world prices received by the boards; and boards have not maximized foreign exchange revenue, but have sacrificed such revenue for their own profits.

Finally, Canarella and Pollard have estimated an econometric model to test what variables are important in determining how farm prices (and in the case of coffee, the bonus) are set and if the supply response by farmers to such prices are indeed considered by the board in setting such prices. They examined the sugar and coffee industries and report that world prices and the exchange rate are important variables in influencing farm prices. Further, they show that in the case of sugar cane, farmer response

is considered by the board, but in the case of coffee, farmer response is not considered by the board. This is consistent with observations about the board and the relationships that exist between the boards and the farmers in each of these industries.

### 3. Domestic Food Crop Marketing

Analysis of the marketing of domestic food crops (fruits, legumes, vegetables, yams, potatoes, condiments, etc.) in Jamaica has also received widespread attention. A comprehensive review of the marketing of domestic food crops is contained in a USDA assessment of Jamaican agriculture and in Lewars' summary article and their findings are noted here.

The most important marketing agents in Jamaica are the higglers (most of them women) who were estimated to be 13,000 in 1977 (Smikle and Taylor), but could be as high as 30,000. Higglers are small private traders who are also estimated to handle 80 percent of the total amount of domestic production. Higglers provide harvesting, credit and transportation to the farmer. Higglers can undertake both a strict wholesaler role or can be both wholesaler and retailer with family members providing the necessary labor. The Coronation Market in Kingston serves as the major transfer and wholesaling point in the island. Hence, products frequently move from outlying parishes to Kingston and back to these same parishes. Survey work by Graham, et. al. and Smikle and Taylor suggests that these services are provided free to the farmer. However, there is no doubt that farmers do

receive a lower price if higglers extend harvesting and credit services. Results of farm surveys indicate that there are also instances where farmgate prices are offered based on lower than actual retail prices that prevailed at the time of sale.

There are both benefits and problems associated with the higgler system and it is not clear if higglers are efficiently marketing food crops in Jamaica. The most commonly cited benefit is that no one but the higglers are willing to go into the hilly and rough terrain areas in Jamaica where most foodcrops are grown. Another perceived benefit is that higglers are cost effective and do market foodcrops as cheaply as possible. Perceived problems with the higgler system that are commonly cited are: 1) retail price signals may not adequately be transmitted to the farmer; 2) each higgler can only handle a very small proportion of output at any one time; 3) damage and spoilage is quite high due to lack of sufficient storage, grading and transport systems; and 4) higglers exploit farmers by offering lower than market prices. There have two notable policy responses to these problems.

The first was the creation of the Agricultural Marketing Corporation (AMC) by the JLP government in 1963. However, it was terminated by the present JLP government in 1985. The AMC was set up to improve and increase production through provision of incentives to farmers and to also provide food cheaply to urban areas and reduce post harvest loss. The AMC, however, was never able to fulfill its role as a major marketer of domestic food crops. Over its life, the AMC was only able to market an average

covered by government subsidies (Lewars, Pollard and Graham). Lewars reports that farmers did not utilize the AMC services for numerous reasons such as: 1) higglers provide services of harvesting and credit; 2) higglers paid higher prices than AMC; 3) farmers viewed AMC as a buyer of the last resort and; 4) insufficient working capital and high overhead costs limited the ability to purchase large quantities of produce. It was this fourth reason which required a continuous level of government support that led to its closure as the Seaga government moved towards privatization of the economy.

The second policy response was a project, financed by USAID, to improve the wholesale marketing infrastructure. This project was designed to improve the poor performance of all (private and public) marketing agents in Jamaica, reduce postharvest losses, and increase the marketable surplus of farms. Rehabilitation of parish markets is ongoing as is the setting up of grading and assembly stations in food producing regions.

#### **4. Livestock Product Marketing**

In this section we consider the marketing of beef, pork, chicken, and milk. Beef and pork are sold to slaughter houses in Kingston or slaughtered by the farmer and sold directly to meat shops, country stalls and supermarkets. Until 1973, beef prices were controlled at both farm and retail levels. However, after 1973 beef prices and production have been constrained by rising beef imports.

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Poultry meat production and marketing are intergrated in Jamaica. This is most likely due to the vertical intergration of the poultry industry in Jamaica. The poultry farmer in Jamaica faces very little risk. This is because the poultry processor supplies feed, medicine and veterinary services, and picks up and delivers the chickens. These services are "paid" for by the farmer and deducted from the final payment to the farmer. The result has been a steady increasing supply of poultry meat for consumers. Imports of poultry meat have consisted primarily of necks and backs which are consumed by the majority of the urban poor.

Milk production and milk marketing in Jamaica has long been an area that has received notable attention from policymakers. The goal has been a self sufficient dairy industry, but this has been tempered with the view that consumers should receive milk at affordable prices. In a review article on Jamaica's dairy sector, Craig noted that the primary failure of this sector is the relationship between farmers and processors. Jamaican processors have implied that it is costly to use locally produced milk and have relied heavily on skim milk powder as a source of supply. Milk processing is performed by 6 companies. Fluid milk is sold at the retail level in stores equipped with refrigeration facilities such as supermarkets in urban areas. Condensed milk is sold everywhere since refrigeration is not required. Prices at the farm and processor level are controlled by government. The local price of skim milk powder is set by the Commodity Trading Corporation. As Craig has noted, the pricing policy of the government has promoted the use of imported milk powder over

local fresh sources. The root of this pricing policy problem is that farm prices are set on a cost of production basis by the Jamaica Livestock Association and the Ministry of Agriculture, while processors' margins are set by the Ministry of Industry and Commerce. Milk production appears profitable, but milk powder is cheaper than fresh milk as a source of supply.

### 5. Grain Marketing

The following information on grain marketing was obtained from the Jamaica Commodity Trading Company and pertains to imported grains. #3 Yellow corn is sold to four privately owned feed mills who provide animal feed for local use. #2 Yellow corn is sold to a privately owned plant which produces cornmeal for the local market. Wheat that is imported by JCTC is sold to the privately owned flour mill which produces various types of flour for local use. Brown rice that is imported is delivered to the rice mill, owned jointly by the Jamaican government owned firms and foreign investors. The bagged white rice is sold to the local distributive trade. Prices paid by mills for grains are based on the import costs, plus other handling charges. Locally produced corn is marketed by higglers and/or sold to private millers. Rice that is locally grown is sold to the mill.

### 6. Edible Oils

Edible oil consists of two primary sources coconut oil and soybean oil. Imported soybean oil is sold to a privately owned

company for bottling and sale in the local market. The coconut industry was an important export commodity until 1944 when a hurricane devastated the industry. The coconut industry since then has primarily served the domestic oil market and is the only legal producer of cooking oil. The Coconut Industry Board wholly owns SEPROD (Soaps and Edible Oil Products Company) which is the primary manufacturer of these coconut products. The coconut industry is completely vertically intergrated, with the Board playing a central role. It is estimated that the board receives less than ten percent of total production of coconuts and as a result relies on imported coconut and soybean oil to supply the domestic market. Cooking oil prices have been controlled and this has constrained the price that can be paid to growers. The result has been an increase in illegal "backyard" oil producers who offer prices, sometimes double the board's price. The proliferation of these backyard producers is due to the tastes of Jamaican consumers who prefer local coconut oil (at high prices) to cheaper priced soybean oil. The board has tried to halt this trade by importation of cheap vegetable oil, but has been unsuccessful.

## **7. Trends in Prices and Margins**

The trends in farmgate, retail, export, and import prices have been presented in a descriptive manner in a previous background paper. The data contained in this previous paper have been collected from a variety of sources including published and

unpublished reports from the Ministry of Agriculture (MOA) and the Statistical Institute of Jamaica (STATIN). A detailed description of these data and a discussion of issues surrounding the collection and use of these data are given in the above cited background paper.

Trends in the growth of prices in Jamaica were estimated by the following equation:

$$\log Y(t) = a + b*TIME + v(t) \quad (1)$$

where  $\log Y$  is the natural logarithm of the variable being analyzed (i.e. retail price, export price, import price);  $TIME$  is the actual time period; and  $v$  is the stochastic error term with zero mean and constant variance.

The estimated equations, time periods and variables are reported in Table A1. Trends in the prices of selected commodities are graphically depicted in Appendix B and values of the marketing trends for selected commodities are contained in Tables B1-B16. The trends in nominal farm prices have been reported in Background Paper 3 and are just briefly summarized here. The growth of nominal farm prices, for commodities produced primarily for the domestic market, has exceeded 16 percent per annum and have kept up with or exceeded the rate of inflation. A similar conclusion can be drawn for retail prices. This suggests that marketing margins for these crops have been constant over time and that price changes at the retail level are accurately reflected at the farm level. The trend equations for the marketing margin (the farm-retail price spread) generally

support this view and can be interpreted as follows. The coefficient on TIME,  $b$ , is the growth rate of the margin and a positive sign implies that the farm price - retail price spread is being reduced over time (the margin approaches one as the farm price approaches the retail price), while a negative sign implies that the spread is increasing over time (the farmers' share is being reduced). The major exceptions to the view of constancy of the marketing margins over time are peanut, turnip, onion, hot pepper, and sweet pepper. In these crop lines, farmers have been receiving a larger share of increasing retail prices. For example, the marketing margin for onion in 1970 was 27.71% and had grown to 1.073% in 1986. In contrast, the marketing margin for sweet potato in 1971 was 62.50% and was 66.00% in 1986. A very small number of crops have experienced an increase in the farm-retail spread, but in most cases  $b$  is not statistically significantly different from zero for these crops (such as tomato). The constancy of the marketing margins would imply that a one percent change in retail prices would result in a one percent change in farm prices. This hypothesis will be tested below.

The trends in world prices and farm prices for the traditional export crops reveal that farm prices have not kept pace with increases in world prices. For the period 1960-1970, the principle finding is that while real prices received by the board declined, real farmgate prices of all crops declined at a faster rate. In the 1970's, world sugar prices increased, but

the farmgate sugar cane price was fairly constant and declined from 1975-1979. From 1979 to 1984, the real farmgate price for sugar has been rising while FOB prices declined. Banana, coconut, coffee, pimento, and cocoa prices received by the boards increased over most of the decade of the 1970's, but real farmgate prices of these crops do not rapidly increase until 1975 and most have declined in the 1980's. These points are supported by the growth of the marketing margins which are negative for all crops except bananas. Given the price response of export crop farmers previously noted, the pricing policies of the board have had a negative impact on the output performance of the traditional export crop sector.

As was noted, explicit retail price controls and imports have played an important role in determining prices in the dairy and livestock sector. Nominal farm and retail prices for beef, pork, chicken, and milk have increased with the inflation rate, with real prices remaining fairly constant over the period 1970-1986. Margins have also been increasing slowly over time. Hence, little incentive has been given to farmers in livestock activities to increase output or upgrade their operations. Beef prices were decontrolled in 1973, but increases in beef imports have mitigated potential price increases. In the case of chicken necks and backs and milk, the retail-cif margin growth is negligible. This indicates that any increases (decreases) in imported prices of chicken neck and backs and skim milk powder are passed directly to the consumer in the form of higher (lower)

prices. A depreciation of the exchange rate, which raises import prices, would appear to adversely effect the urban poor who consume the bulk of these products.

The trends in prices of grains, oils and staples such as flour and cornmeal reveals that import prices are increasing faster than retail prices. Estimated trend equations for the retail-cif price margins support this as the coefficients of  $b$  are negative. Consumers of flour, cornmeal and coconut oil are insulated from world price fluctuations as the retail price as a percent of the cif price has been declining. Rice and soybean oil represent interesting contrasts in that retail prices have been increasing faster than cif prices.

### **8. Estimates of margin equations**

In this section estimates of margin equations are presented for all commodities. The purpose of this estimation is to determine the impact of changes in retail (or cif and fob) prices on farm (retail) prices. The specification that is employed is one suggested by Heien and is consistent with the specification of the supply functions estimated in Background Paper 3 and the descriptive analysis of the marketing system. Heien's approach focuses on the retail level where the level of output at the retail level is a function of the amount produced at the farm level and marketing and processing services. Farm production is assumed to be determined by the farm price prevailing in the previous period. Under competitive conditions, Heien derives the

demand at the farm level as:

$$F(t) = g\{(p/f), (p/b)\} \quad (2)$$

where  $F$  is the output at the farm level,  $p$  is the retail price,  $f$  is the farm price, and  $b$  is the price of marketing services. Since  $F$  is predetermined, we can obtain the price dependent factor demand curve:

$$(f/p) = g\{F, (p/b)\} \quad (3)$$

Equation 3 is estimated in log linear form:

$$\log (f/p)(t) = c_0 + c_1 \log F(t) + c_2 \log (p/b)(t) + e(t)$$

where  $f$ ,  $p$ , and  $F$  are defined as above.  $b$  is proxied by the transportation component of the CPI. This was done since transportation costs are a major component of marketing in Jamaica and measures of other marketing and/or processing costs are not widely available over time.

Interpretation of equation 3 is straightforward. The expected sign of  $c_1$  is negative which implies that increases in output at the farm level will reduce the price that farmers receive. The elasticity of farm price with respect to retail price is equal to  $1 + c_2$ . The impact of the retail price on farm price depends on the sign and magnitude of  $c_2$ . A positive (negative) sign implies that, for example, a one percent change in retail prices has a greater (less) than one percent impact on farm prices. An insignificant value of  $c_2$  would indicate that a one percent change in retail prices has a one percent change in farm prices.

The statistical estimates of eq. 3 are presented in Table A2. The elasticities of farm price with respect to either retail, cif

and fob are reported in Table 1. Several interesting findings emerge. First, the vast majority of domestic food crops have elasticities that are equal to one. This is consistent with the notion that marketing margins are constant for these crops. Second, the majority of root crops and tubers (yams and coco) and beef have elasticities less than one. This implies that increases in retail prices are not fully reflected back to the farm level and hence, farmers do not receive the benefit of higher retail prices. In the case of staples and grains, the relationship between retail prices and import prices indicates that consumers are protected from rising import prices since the elasticity is less than one. On the other hand, farmers that produce coffee, sugar cane and cocoa are implicitly taxed when world prices rise since the elasticities are all less than one which suggests that increases in the prices that the board receives are not fully passed onto to the farmer. However, when the world price decreases, the full change is not passed onto these farmers. Thus, prices at the farmgate appear to have been "stabilized" by the boards in these crop lines as farmers are protected from from world price swings. This "stabilization" policy is not beneficial to farmers, though, when the result is low and unchanging farmgate prices.

Finally, the following margin equation was estimated:

$$\log(f/p) = d_0 + d_1 \cdot \log p(t) + d_2 \cdot \log b(t) + w(t) \quad (4)$$

The elasticity of farm price with respect to retail price is  $1 + d_1$  and the impact of transportation costs is measured by  $d_2$ . The

Table 1 Responsiveness of Farm Prices to Output, Retail Prices, FOB Prices and CIF Prices.

<u>Commodity</u>	<u>Output Elasticity of Margin</u>	<u>Retail Price or FOB Price or CIF Elasticity of Farm Prices</u>
Broad Bean	n.s.	1.00
Cow Pea	.183	1.290
Gungo Pea	n.s.	1.4860
Red Pea	.183	1.00
Peanut	.129	.459
Sugar Bean	n.us	.802
Beetroot	-.237	1.00
Cabbage	n.s.	1.00
Calaloo	n.s.	.516
Carrot	.164	1.00
Cauliflower	n.s.	1.00
Cho-Cho	n.s.	.664
Cucumber	-.129	.443
Egg Plant	n.s.	1.00
Iceberg Lettuce	.227	1.00
Other Lettuce	n.s.	.325
Okra	n.s.	1.00
Pumpkin	.297	1.00
Tomato	n.s.	1.173
Turnip	-.519	.403
String Bean	n.s.	.102
Onion	n.s.	1.943
Hot Pepper	.692	1.00
Sweet Pepper	n.s.	.102
Thyme	-1.189	.716
Ordinary Corn	.305	.681
Paw-Paw	n.s.	1.00
Pineapple	n.s.	1.00
Watermelon	-.233	.611
Hoese Plantain	-.171	.101
Other Plantain	.209	1.00
Irish Potato	n.s.	1.00
Sweet Potato	n.s.	1.00
Lucas Yam	n.s.	.547
Negra Yam	n.s.	.564
Renta Yam	n.s.	1.00
St. Vincent Yam	n.s.	1.00
Sweet Yam	n.s.	.773
Yellow Yam	n.s.	1.00
Other Ym	.103	.585
Bitter Cassava	.279	.101
Sweet Cassava	n.s.	1.00
Tan Yam	n.s.	.167
Dashoon	n.s.	1.00
Coco	n.s.	.526
Roaf	.940	.700
Cocoa *	.533	.109
Coffee *	n.s.	.526

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<u>Commodity</u>	<u>Output Elasticity of Margin</u>	<u>Retail Price or FOB Price or CIF Elasticity of Farm Price</u>
Wheat *	- .327	1.00
Sugar Cane *	n.s.	.409
Cocoa *	n.s.	1.00
Wool **	n.s.	.207
Wheat **	n.s.	.219
Crude Oil **	n.s.	.158
Wheat **	n.s.	.205

Notes:

- n.s. = not significant
- \* = Farm Price response to change in FOB Price
- \* = Retail Price response to change in CIF Price
- \*\* others: Farm Price response to change in Retail Price

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results are reported in Table A2 and conform to the results found using equation 3.

### 9. Implications

The results of the estimated margin equations appear to give plausible values for the relationships that exist between prices at different levels of the marketing chain (farm, retail, import, and export). Generally, these results conform to the descriptive analysis of the marketing system and the time trends of these prices. The following characterization appears valid: the more competitive the marketing environment is, the more likely changes in retail (cif,fob) have a one to one correspondence with changes in farm prices. The opposite holds true where the marketing environment is more regulated such as in the case of imported staples and export crops, where in the case of the former consumers are protected from rising import prices, while in the later farmers are penalized when prices received by the board are rising.

The elasticities can be utilized to predict how price changes at one stage of the marketing chain will impact on prices at other levels. The trend equations can be used to make short run forecasts. These elasticities will be incorporated with the estimates of demand and supply parameters to generate future policy papers on price intervention analysis.

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Table A1 Trend Equations for Retail Prices, CIF Prices, FOB Prices and Marketing Margins of Selected Agricultural Products in Jamaica.

Dependent Variable	a	b	R <sup>2</sup>
Broad Bean (1971-85)			
Retail Price	1.307	.216	.88
Farm-Retail Margin	-0.867	.028	.33
Cow Pea (1970-85)			
Retail Price	1.816	.195	.97
Farm-Retail Margin	-0.554	.014	.17
Gungo Pea (1970-85)			
Retail Price	1.843	.139	.97
Farm-Retail Margin	-1.252	.015	.12
Red Pea (1971-85)			
Retail Price	1.976	.198	.96
Farm-Retail Margin	-0.403	.007	.10
Peanut (1971-85)			
Retail Price	2.331	1.33	.88
Farm-Retail Margin	-2.042	.099	.75
Sugar Bean (1971-85)			
Retail Price	1.063	.223	.89
Farm-Retail Price	-.326	.004	.008
Rootbeet (1971-85)			
Retail Price	.960	.159	.98
Farm-Retail Margin	-.599	-.006	.02
Cabbage (1971-1985)			
Retail Price	1.369	.132	.91
Farm-Retail Margin	-.277	-.011	.02
Calaloo (1977-86)			
Retail Price	.942	.130	.88
Farm-Retail Price	-.892	.018	.28
Carrot (1970-86)			
Retail Price	.925	.165	.98
Farm-Retail Margin	-.861	.017	.32
Cho Cho (1971-86)			
Retail Price	.122	.161	.91
Farm-Retail Margin	-1.052	.017	.22
Cauliflower (1971-85)			
Retail Price	.948	.199	.91
Farm-Retail Margin	-.657	.006	.02
Cucumber (1971-86)			
Retail Price	.672	.112	.88
Farm-Retail Margin	-.761	.002	.001
Egg Plant (1971-85)			
Retail Price	.921	.175	.96
Farm-Retail Margin	-1.029	.002	.001
Iceberg Lettuce (1972-85)			
Retail Price	.915	.126	.99
Farm-Retail Margin	-.778	.007	.02

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Dependent Variable	a	b	R <sup>2</sup>
Orbiter Lettuce (1972-85)			
Retail Price	.556	.213	.90
Farm-Retail Margin	.230	-.007	.01
Okra (1971-85)			
Retail Price	.700	.110	.97
Farm-Retail Margin	-.444	-.017	.001
Pumpkin (1971-86)			
Retail Price	.008	.177	.98
Farm-Retail Margin	-.691	.010	.16
Tomato (1970-86)			
Retail Price	1.235	.159	.98
Farm-Retail Margin	-.446	-.007	.05
Turnip (1971-85)			
Retail Price	.553	.155	.98
Farm-Retail Margin	-1.429	.041	.63
String Bean (1971-86)			
Retail Price	.783	.177	.98
Farm-Retail Margin	-.626	.005	.03
Onion (1970-86)			
Retail Price	.722	.217	.95
Farm-Retail Margin	-1.659	.051	.49
Hot Pepper (1971-86)			
Retail Price	-.156	.174	.96
Farm-Retail Margin	-1.362	.079	.69
Sweet Pepper (1971-85)			
Retail Price	1.689	.129	.91
Farm-Retail Margin	-1.698	.048	.35
Thyme (1972-86)			
Retail Price	2.421	.164	.86
Farm-Retail Margin	.114	-.030	.21
Ordinary Corn (1971-85)			
Retail Price	-.685	.227	.95
Farm-Retail Margin	-.821	-.002	.00
Paw Paw (1972-86)			
Retail Price	.106	.169	.97
Farm-Retail Margin	.014	-.032	.73
Pineapple (1971-85)			
Retail Price	.105	.182	.98
Farm-Retail Margin	-1.193	.028	.28
Watermelon (1971-86)			
Retail Price	.22	.17	.98
Farm-Retail Margin	-.84	.02	.11
Horse Plantain (1971-86)			
Retail Price	.074	.16	.98
Farm-Retail Margin	-.346	-.005	.02
Other Plantain (1971-85)			
Retail Price	.057	.163	.97
Farm-Retail Margin	-.172	-.006	.09
Irish Potato (1970-86)			
Retail Price	.079	.199	.97
Farm-Retail Margin	-.660	.010	.18

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Dependent Variable	a	b	R <sup>2</sup>
Sweet Potato (1971-86)			
Retail Price	.063	.169	.97
Farm-Retail Margin	-.435	.002	.02
Cocoa Yam (1971-85)			
Retail Price	.388	.163	.97
Farm-Retail Margin	-.413	.008	.01
Congo Yam (1971-86)			
Retail Price	.178	.176	.96
Farm-Retail Margin	-.338	.002	.005
Ghana Yam (1972-85)			
Retail Price	.072	.166	.97
Farm-Retail Margin	-.639	.012	.18
St. Vincent Yam (1971-85)			
Retail Price	.008	.169	.97
Farm-Retail Margin	-.448	.007	.05
Sweet Yam (1971-85)			
Retail Price	.441	.158	.97
Farm-Retail Margin	-.302	-.0002	.00
Tanzania Yam (1972-85)			
Retail Price	.288	.160	.95
Farm-Retail Margin	-.816	.022	.28
Yellow Yam (1971-86)			
Retail Price	.398	.168	.96
Farm-Retail Margin	-.592	.011	.28
Other Yam (1971-85)			
Retail Price	.509	.159	.98
Farm-Retail Margin	-.095	-.018	.19
Bitter Cassava (1976-85)			
Retail Price	-.159	.154	.94
Farm-Retail Margin	.224	-.031	.25
Sweet Cassava (1976-85)			
Retail Price	-.054	.160	.92
Farm-Retail Margin	-.032	-.023	.19
Cassava (1976-85)			
Retail Price	-.107	.171	.95
Farm-Retail Margin	-.447	.0005	.00
Cocoa (1976-85)			
Retail Price	.102	.168	.92
Farm-Retail Margin	-.279	-.006	.01
Cocoa			
FOB Price (1960-86)	-1.731	.111	.35
Farm-FOB Margin	-.649	.004	.006
Cocoa			
FOB Price	-.329	.123	.53
Farm-FOB Margin	-.193	-.013	.26
Cocoa			
FOB Price	.160	.019	.51
Farm-FOB Margin (1967-85)	-1.308	.050	.55
Coffee			
FOB Price (1960-86)	-1.379	.137	.95
Farm-FOB Margin (1967-86)	-.8077	-.016	.12

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Dependent Variable	a	b	R <sup>2</sup>
Sugar and Sugar Cane			
FOB Price	-2.574	.143	.87
Farm-FOB Margin (1967-86)	-.191	-.019	.13
Flour (1967-86)			
Retail Price	1.592	.127	.88
Wheat flour CIF Price	-5.385	.198	.95
Counter flour CIF Price	-.662	.183	.93
Wheat CIF Price	2.667	.144	.89
Baking flour CIF Price	.132	.151	.92
Retail-CIF Margin (Wheat flour)	1.679	-.070	.68
Retail-CIF Margin (Wheat)	1.227	-.017	.10
Retail-CIF Margin (Baking flour)	.848	-.021	.13
Retail-CIF Margin (Counter flour)	1.642	-.052	.38
Cornmeal (1967-85)			
Retail Price	-.065	.158	.97
CIF Price	-5.184	.181	.89
Retail CIF Margin	.331	-.016	.05
Rice (1967-86)			
Retail Price	1.046	.145	.94
CIF Price	-3.568	.119	.92
Retail-CIF Margin	.009	.025	.28
Coconut Oil (1972-86)			
Retail Price	.843	.201	.97
CIF Price	-2.432	.229	.84
Retail-CIF Margin	.749	-.028	.10
Soybean Oil (1972-86)			
CIF Price	-1.773	.171	.76
Retail-CIF Margin	.091	.029	.07
Beef (1970-85)			
Retail Price	2.139	.164	.97
Farm-Retail Price	-1.438	.015	.44
Milk (1970-85)			
Retail Price	.352	.189	.98
Farm-Retail Price	-.600	.016	.16
Farm-CIF Margin	.615	.029	.22
Retail-CIF Margin (1967-86)	1.588	.004	.005
Chicken (1973-86)			
Retail Price (Neck and Back)	.412	.177	.89
Retail Price (Chicken)	1.119	.175	.96
Retail-CIF Margin (Neck and Back)	5.197	.004	.01

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Table A2 Estimates of Marketing Margin Equations for Selected Agricultural Commodities in Jamaica

<u>Commodity</u>	<u>Intercept</u>	<u>c1</u>	<u>c2</u>	<u>d1</u>	<u>d<sup>2</sup></u>
Cabbage	.599 (.331)	-.101 (.479)	.094 (.386)		
Cabbage	-.099 (.309)			.073 (.328)	-.129 (.687)
Calaloo	-4.371 (1.368)	.315 (.947)	-.484 (2.129)		
Calaloo	-1.721 (3.469)			-.349 (1.479)	.449 (2.068)
Carrot	-2.143 (2.461)	.164 (1.779)	-.059 (.262)		
Carrot	-1.215 (4.009)			-.107 (.530)	.212 (1.033)
Cauliflower	-.667 (1.682)	.057 (.834)	.165 (.668)		
Cauliflower	-.272 (.563)			.265 (1.124)	-.281 (1.052)
Cho-Cho	-2.215 (1.632)	.097 (.617)	-.336 (2.286)		
Cho-Cho	-1.802 (5.801)			-.306 (2.381)	.397 (3.057)
Cucumber	-.523 (.684)	-.129 (1.489)	-.557 (2.745)		
Cucumber	-1.497 (4.171)			-.611 (2.419)	.564 (2.498)
Egg Plant	-1.503 (.944)	-.081 (.313)	-.057 (1.047)		
Egg Plant	-2.197 (2.155)			-.635 (1.271)	.683 (1.316)
Broad Bean	-1.432 ( )	.213 (1.050)	-.035 (.216)		
Broad Bean	-1.493 4.253			-.244 (1.762)	.480 (2.604)
Cow Pea	-1.591 (2.040)	.183 (1.522)	.290 (1.622)		
Cow Pea	-.579 (2.111)			.309 (1.409)	-.272 (1.048)
Gungo Pea	-.851 (.480)	-.031 (.138)	.486 (1.550)		
Gungo Pea	1.252 (3.339)			.403 (1.087)	-.368 (.864)
Red Pea	-1.822 (2.885)	.183 (2.315)	.121 (1.084)		
Red Pea	-.496 (2.419)			.142 (.921)	-.110 (.599)

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<u>Commodity</u>	<u>Intercept</u>	<u>c1</u>	<u>c2</u>	<u>d1</u>	<u>d2</u>
Peanut	-3.521 (1.820)	.429 (1.611)	-.541 (1.347)		
Peanut	-2.988 (5.550)			-.262 (1.042)	.793 (3.726)
Sugar Bean	-.459 (.322)	.042 (.162)	-.198 (1.683)		
Sugar Bean	-.939 (2.857)			-.331 (2.833)	.471 (2.942)
Beet Root	.868 (.755)	-.237 (1.383)	-.002 (.006)		
Beet Root	-.572 (1.341)			-.023 (.061)	-.008 (.023)
Iceberg Lettuce	-1.417 (1.797)			-.589 (.964)	.605 (.927)
Other Lettuce	-.355 (.3650)	-.116 (.669)	-.675 (2.541)		
Other Lettuce	-2.063 (2.192)			-.782 (2.908)	.942 (2.744)
Okra	-.072 (.046)	-.121 (.517)	-.251 (.784)		
Okra	-.817 (1.509)			-.471 (1.084)	.370 (1.035)
Pumpkin	-3.511 (2.715)	.297 (2.333)	.008 (.058)		
Pumpkin	-.997 (2.789)			-.074 (.500)	.145 (.915)
Tomato	-.460 (.577)	.033 (.374)	.473 (1.462)		
Tomato	-.021 (.063)			.372 (1.242)	-.412 (1.409)
Turnip	2.207 (.899)	-.519 (1.748)	-.597 (1.243)		
Turnip	-1.463 (2.248)			.274 (.571)	-.029 (.066)
String Bean	-1.327 (1.384)	.111 (.957)	-.051 (.188)		
String Bean	-.553 (1.333)			.058 (.234)	-.041 (.153)
Onion	-.148 (.335)	-.030 (.570)	.943 (4.699)		
Onion	-.363 (.701)			.868 (4.349)	-.874 (3.218)
Hot Pepper	-4.332 (1.929)	.692 (2.772)	.203 (.412)		
Hot Pepper	-1.528 (1.733)			.293 (.847)	.147 (.399)
Sweet Pepper	-2.094 (5.279)	.059 (.884)	-.897 (4.245)		
Sweet Pepper	-2.049 (4.946)			-.858 (3.328)	.932 (4.591)

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<u>Commodity</u>	<u>Intercept</u>	<u>c1</u>	<u>c2</u>	<u>d1</u>	<u>d2</u>	<u>R<sup>2</sup></u>
lyme	5.919 (4.352)	-1.189 (4.664)	-.254 (1.430)			.66
lyme	.589 (1.122)			-.252 (.968)	.066 (.248)	.27
rdinary Corn	-3.772 (2.538)	.305 (1.570)	-.319 (1.400)			.33
rdinary Corn	-3.361 (3.015)			-.796 (2.581)	1.038 (2.480)	.36
aw-Paw	-1.626 (.846)	.062 (.261)	-.282 (1.117)			.10
aw-Paw	-.221 (1.062)			-.343 (3.592)	.147 (1.532)	.87
ineapple	-.046 (.021)	-.149 (.698)	-.436 (1.197)			.32
ineapple	-2.904 (8.915)			-.718 (4.907)	.938 (5.985)	.80
atermelon	.743 (.760)	-.233 (2.024)	-.359 (1.567)			.31
atermelon	1.552 (2.930)			-.275 (1.142)	.375 (1.528)	.23
orse Plantain	-.055 (.047)	-.171 (1.292)	-.599 (2.975)			.41
orse Plantain	-1.346 (3.398)			-.579 (3.034)	.514 (2.859)	.42
ther Plantain	-2.577 (3.704)	.209 (2.575)	-.046 (.400)			.41
ther Plantain	-.754 (2.837)			-.198 (1.538)	.154 (1.242)	.23
rish Potato	.149 (.167)	-.051 (.480)	.104 (.741)			.14
rish Potato	-.660 (1.907)			.059 (.474)	-.007 (.047)	.18
weet Potato	.451 (.573)	-.063 (.723)	.100 (.687)			.13
weet Potato	-.141 (.479)			.155 (1.207)	-.145 (1.102)	.11
ucea Yam	4.375 (1.017)	-.564 (1.185)	-.453 (1.404)			.16
ucea Yam	-.802 (1.492)			-.212 (.715)	.246 (.859)	.08
egro Yam	.574 (.373)	-.161 (.963)	-.436 (2.366)			.31
egro Yam	-1.060 (3.088)			-.342 (2.292)	.369 (2.318)	.29
enta Yam	3.055 (.686)	-.358 (.803)	-.088 (.413)			.06
enta Yam	-.707 (1.684)			.033 (.160)	.035 (.176)	.15

<u>Commodity</u>	<u>Intercept</u>	<u>c1</u>	<u>c2</u>	<u>d1</u>	<u>d2</u>
St. Vincent Yam	-.831 (.323)	.021 (.074)	-.145 (.501)		
St. Vincent Yam	-.792 (1.334)			-.125 (.441)	.162 (.577)
Sweet Yam	-.473 (.503)	-.026 (.225)	-.227 (1.215)		
Sweet Yam	-.61 (1.919)			-.25 (1.359)	.22 (1.307)
Yellow Yam	-1.565 (1.131)	.111 (.836)	.009 (.067)		
Yellow Yam	-.774 (3.444)			-.012 (.115)	.083 (.735)
Other Yam	-4.517 (1.970)	.403 (1.596)	-.413 (1.616)		
Other Yam	-.542 (1.362)			-.501 (2.106)	.361 (1.623)
Bitter Cassava	-1.614 (1.023)	.279 (1.842)	.614 (2.369)		
Bitter Cassava	1.507 (2.042)			.425 (1.442)	-.584 (2.144)
Sweet Cassava	.130 (.064)	-.098 (.435)	-.113 (.350)		
Sweet Cassava	.033 (.049)			-.225 (.854)	.037 (.147)
Tau Yam	-.223 (.142)	-.126 (.673)	-.533 (2.472)		
Tau Yam	-1.541 (4.204)			-.352 (1.877)	.448 (2.557)
Dasheen	.402 (.107)	-.124 (.325)	-.185 (.646)		
Dasheen	-.850 (1.051)			-.173 (.598)	.183 (.620)
Coco	.324 (.100)	-.169 (.451)	-.474 (1.739)		
Coco	-.905 (1.719)			-.395 (2.308)	.351 (1.997)
Beef	-9.655 (2.939)	.840 (2.609)	-.291 (1.549)		
Beef	-1.497 (8.444)			-.153 (.815)	.230 (1.228)
Cocoa*	-9.752 (3.433)	.533 (2.403)	-.591 (3.800)		
Cocoa*	-6.565 (5.099)			-1.057 (4.832)	1.307 (4.581)
Coffee*	-2.859 (.879)	.027 (.113)	-.474 (3.319)		
Coffee*	-4.369 (4.662)			-.768 (4.279)	.938 (3.873)

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Commodity	Intercept	c1	c2	d1	d2	R
Banana*	3.547 (1.475)	-.327 (4.559)	-.251 (1.00)			
Banana*	-4.110 (2.109)			-.269 (.971)	.561 (2.042)	.5
Sugar- Sugar Cane*	-.922 (.445)	.105 (.421)	-.591 (3.229)			.4
Sugar- Sugar Cane*	-3.502 (2.8351)			-.548 (3.103)	.470 (2.256)	.4
Pimento*	-1.775 (.656)	.103 (.565)	.046 (.476)			.0
Pimento*	-.817 (2.344)			-.267 (2.617)	.096 (1.277)	.4
Rice**	-3.299 (1.124)	-.0755 (.428)	-.793 (5.044)			.6
Flour**	-4.382 (1.824)	-.022 (.160)	-.751 (3.159)			.3
Edible Oil**	-.097 (.029)	-.245 (.596)	-.842 (11.136)			.8
Milk**	-2.435 (1.061)	-.097 (.685)	-.795 (6.943)			.7

Notes: Absolute T-values in parentheses.  
 Dependent variable is the farm-retail margin except for \* commodities farm-export margin and \*\* commodities retail-import margin.

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TABLE B1: MARKETING MARGINS FOR RED PEAS

YEAR	FARM TO RETAIL	FARM TO IMPORT	RETAIL TO IMPORT
1960	N/A	N/A	N/A
1961	N/A	N/A	N/A
1962	N/A	N/A	N/A
1963	N/A	N/A	N/A
1964	N/A	N/A	N/A
1965	N/A	N/A	N/A
1966	N/A	N/A	N/A
1967	N/A	N/A	N/A
1968	N/A	N/A	N/A
1969	N/A	N/A	N/A
1970	.554881	N/A	N/A
1971	.682927	1.56837	2.29654
1972	.728495	1.75406	2.40779
1973	.767591	2.25055	2.93197
1974	.706667	1.58555	2.24370
1975	.714286	2.92575	4.09606
1976	.605769	2.35265	3.88374
1977	.899676	5.23107	5.81439
1978	.876081	3.30323	3.77046
1979	.857143	N/A	N/A
1980	.937870	2.05424	2.19033
1981	.830015	3.07816	3.70855
1982	.852564	2.59992	3.04953
1983	.810323	3.75157	4.62973
1984	.819558	2.44418	2.98232
1985	.700687	1.40188	2.00073
1986	.726000	1.47200	2.02836

TABLE B2.      MARKETING MARGINS:   BITTER CASSAVA

YEAR	FARM TO RETAIL	FARM TO EXPORT	RETAIL TO EXPORT
1960	N/A	N/A	N/A
1961	N/A	N/A	N/A
1962	N/A	N/A	N/A
1963	N/A	N/A	N/A
1964	N/A	N/A	N/A
1965	N/A	N/A	N/A
1966	N/A	N/A	N/A
1967	N/A	N/A	N/A
1968	N/A	N/A	N/A
1969	N/A	N/A	N/A
1970	N/A	N/A	N/A
1971	.750000	N/A	N/A
1972	.800000	N/A	N/A
1973	.666667	N/A	N/A
1974	N/A	N/A	N/A
1975	N/A	N/A	N/A
1976	.833333	2.00000	2.40000
1977	.857143	.206388	.240785
1978	.647059	.360660	.557383
1979	.705882	.314836	.446017
1980	.541667	.288144	.531959
1981	.500000	.218853	.437705
1982	.555556	.188309	.338956
1983	.535714	.234454	.437648
1984	.692308	.432265	.624383
1985	.677966	.371696	.548251
1986	N/A	N/A	N/A

TABLE B3.      MARKETING MARGINS:    PINEAPPLE

YEAR	FARM TO RETAIL	FARM TO EXPORT	RETAIL TO EXPORT
1960	N/A	N/A	N/A
1961	N/A	N/A	N/A
1962	N/A	N/A	N/A
1963	N/A	N/A	N/A
1964	N/A	N/A	N/A
1965	N/A	N/A	N/A
1966	N/A	N/A	N/A
1967	N/A	N/A	N/A
1968	N/A	N/A	N/A
1969	N/A	N/A	N/A
1970	N/A	.443590	N/A
1971	.500000	.236667	.473333
1972	.333333	.154118	.462353
1973	.352941	.286532	.811840
1974	.450000	.282270	.627267
1975	.416667	.944720	2.26733
1976	.541667	.866667	1.60000
1977	.500000	1.53347	3.06694
1978	.656250	.427816	.651910
1979	.738095	1.10636	1.49894
1980	.775862	.955992	1.23217
1981	.546512	.669937	1.22584
1982	.489130	.529336	1.08220
1983	.557895	.947574	1.69848
1984	.566038	.391501	.691651
1985	.506944	.831940	1.64109
1986	N/A	N/A	N/A

TABLE B4.      MARKETING MARGINS:    GINGER

YEAR	FARM TO RETAIL	FARM TO EXPORT	RETAIL TO EXPORT
1960	N/A	N/A	N/A
1961	N/A	N/A	N/A
1962	N/A	N/A	N/A
1963	N/A	N/A	N/A
1964	N/A	N/A	N/A
1965	N/A	N/A	N/A
1966	N/A	N/A	N/A
1967	N/A	N/A	N/A
1968	N/A	N/A	N/A
1969	N/A	N/A	N/A
1970	N/A	.531059	N/A
1971	2.04545	.540543	.264266
1972	2.65217	.734103	.276793
1973	1.66667	.639389	.383634
1974	1.80000	.597150	.331750
1975	N/A	.780918	N/A
1976	1.00000	.812948	.812948
1977	1.72222	.551857	.320433
1978	1.01515	.300663	.296175
1979	1.70103	.394370	.231841
1980	.908163	.710471	.782316
1981	.756000	.827585	1.09469
1982	.699219	1.15349	1.64968
1983	.780591	.806951	1.03377
1984	N/A	.370085	N/A
1985	2.25909	.363235	.160788
1986	N/A	N/A	N/A

TABLE B5.      MARKETING MARGINS:   WATERMELON

YEAR	FARM TO RETAIL	FARM TO EXPORT	RETAIL TO EXPORT
1960	N/A	N/A	N/A
1961	N/A	N/A	N/A
1962	N/A	N/A	N/A
1963	N/A	N/A	N/A
1964	N/A	N/A	N/A
1965	N/A	N/A	N/A
1966	N/A	N/A	N/A
1967	N/A	N/A	N/A
1968	N/A	N/A	N/A
1969	N/A	N/A	N/A
1970	N/A	N/A	N/A
1971	.545455	N/A	N/A
1972	.500000	N/A	N/A
1973	.538462	N/A	N/A
1974	.500000	N/A	N/A
1975	.631579	N/A	N/A
1976	.565217	N/A	N/A
1977	.400000	N/A	N/A
1978	.517241	.871857	1.68559
1979	.961538	.314469E-01	.327048E-01
1980	.770833	N/A	N/A
1981	.473684	N/A	N/A
1982	.540984	N/A	N/A
1983	.638889	.427850	.669679
1984	.531646	.362968	.682726
1985	.590000	.234450	.397373
1986	.785700	1.00000	1.27300

TABLE B6.      MARKETING MARGINS:    NEGRO YAM

YEAR	FARM TO RETAIL	FARM TO EXPORT	RETAIL TO EXPORT
1960	N/A	N/A	N/A
1961	N/A	N/A	N/A
1962	N/A	N/A	N/A
1963	N/A	N/A	N/A
1964	N/A	N/A	N/A
1965	N/A	N/A	N/A
1966	N/A	N/A	N/A
1967	N/A	N/A	N/A
1968	N/A	N/A	N/A
1969	N/A	N/A	N/A
1970	.593472	N/A	N/A
1971	.549451	.803452	1.46228
1972	.700000	.862381	1.23197
1973	.818182	.946964	1.15740
1974	.684211	1.28345	1.87581
1975	.666667	1.08618	1.62927
1976	.680000	.804044	1.18242
1977	.785714	1.27958	1.62856
1978	.741935	.912995	1.23056
1979	.783784	.785213	1.00182
1980	.750000	.796994	1.06266
1981	.639344	.580375	.907766
1982	.730159	.699545	.958072
1983	.737500	.698570	.947214
1984	.797619	.622135	.779990
1985	.795699	.533851	.670921
1986	.517000	.509000	.983000

TABLE B7.      MARKETING MARGINS:      SWEET POTATO

YEAR	FARM TO RETAIL	FARM TO EXPORT	RETAIL TO EXPORT
1960	N/A	N/A	N/A
1961	N/A	N/A	N/A
1962	N/A	N/A	N/A
1963	N/A	N/A	N/A
1964	N/A	N/A	N/A
1965	N/A	N/A	N/A
1966	N/A	N/A	N/A
1967	N/A	N/A	N/A
1968	N/A	N/A	N/A
1969	N/A	N/A	N/A
1970	N/A	N/A	N/A
1971	.625000	.556665	.890664
1972	.625000	.506299	.810078
1973	.636364	.820077	1.28869
1974	.714286	1.58341	2.21678
1975	N/A	N/A	1.65166
1976	.857143	1.08308	1.26359
1977	.739130	.683639	.924923
1978	.590909	.837847	1.41789
1979	.714286	.926012	1.29642
1980	.725490	.760500	1.04826
1981	.576271	.545151	.945998
1982	.734694	.575310	.783062
1983	.694915	.449411	.646713
1984	.712121	.480479	.674715
1985	.683544	.443641	.649030
1986	.660000	.478000	.724000

TABLE B8.      MARKETING MARGINS:    ONION

YEAR	FARM TO RETAIL	FARM TO IMPORT	RETAIL TO IMPORT
1960	N/A	N/A	N/A
1961	N/A	N/A	N/A
1962	N/A	N/A	N/A
1963	N/A	N/A	N/A
1964	N/A	N/A	N/A
1965	N/A	N/A	N/A
1966	N/A	N/A	N/A
1967	N/A	N/A	2.99294
1968	N/A	N/A	3.07459
1969	N/A	N/A	3.07781
1970	.277136	.672313	2.42593
1971	.279200	.564215	2.02083
1972	.280000	.677379	2.41921
1973	.476190	1.18978	2.49853
1974	.440678	.785310	1.78205
1975	.600000	1.89781	3.16302
1976	.544118	2.50253	4.59925
1977	.762821	6.19125	8.11626
1978	.344086	2.50219	7.27199
1979	.545894	3.55676	6.51549
1980	.655844	6.48309	9.88510
1981	.557432	4.75790	8.53539
1982	.616788	5.97052	9.68001
1983	.600000	4.47123	7.45205
1984	.447090	2.15918	4.82941
1985	.554707	1.62981	2.93813
1986	1.07324	2.22900	4.15500

TABLE B8a. MARKETING MARGINS: ONION.

YEAR	RETAIL TO EXPORT	FARM TO EXPORT
1960	N/A	N/A
1961	N/A	N/A
1962	N/A	N/A
1963	N/A	N/A
1964	N/A	N/A
1965	N/A	N/A
1966	N/A	N/A
1967	N/A	N/A
1968	N/A	N/A
1969	N/A	N/A
1970	3.60833	1.00000
1971	2.55833	.714286
1972	2.98507	.835821
1973	N/A	N/A
1974	13.2750	5.85000
1975	1.89583	1.13750
1976	N/A	N/A
1977	N/A	N/A
1978	N/A	N/A
1979	N/A	N/A
1980	N/A	N/A
1981	N/A	N/A
1982	N/A	N/A
1983	N/A	N/A
1984	1.00157	.447790
1985	1.11829	.620325
1986	2.54370	1.36500

TABLE B9. MARKETING MARGINS: COCONUT OIL AND SOYBEAN OIL

YEAR	COCONUT		SOYBEAN	
	RETAIL TO IMPORT (UNREFINED)	RETAIL TO IMPORT (REFINED)	RETAIL TO IMPORT (UNREFINED)	RETAIL TO IMPORT (REFINED)
1960	N/A	N/A	N/A	N/A
1961	N/A	N/A	N/A	N/A
1962	N/A	N/A	N/A	N/A
1963	N/A	N/A	N/A	N/A
1964	N/A	N/A	N/A	N/A
1965	N/A	N/A	N/A	N/A
1966	N/A	N/A	N/A	N/A
1967	N/A	N/A	N/A	1.65657
1968	N/A	N/A	N/A	3.62827
1969	N/A	.658211	N/A	12.5524
1970	N/A	.919849	N/A	2.76223
1971	N/A	N/A	N/A	2.45916
1972	N/A	1.87383	N/A	2.99220
1973	14.3529	1.06865	20.1073	3.54888
1974	1.26892	1.64502	6.89560	1.07811
1975	1.63725	.963018	1.42779	.953756
1976	3.76371	1.08512	2.39966	1.07389
1977	2.03828	2.21009	1.64442	.753362
1978	2.17152	2.68429	3.90865	3.13097
1979	1.95283	.539176	1.89412	1.82174
1980	2.38067	1.07289	N/A	2.62579
1981	2.56014	.920449	.926120	2.21138
1982	2.33434	1.21398	.756607	2.86896
1983	1.90787	.912393	N/A	3.00281
1984	1.75367	.889079	.891272	2.27183
1985	2.11316	.974322	1.51396	1.90831
1986	N/A	1.45400	N/A	2.49900

TABLE B10.      MARKETING MARGINS:    BEEF AND CHICKEN

YEAR	FARM TO RETAIL (BEEF)	RETAIL TO IMPORT (CHICKEN NECKS AND BACKS)
1960	N/A	N/A
1961	N/A	N/A
1962	N/A	N/A
1963	N/A	N/A
1964	N/A	N/A
1965	N/A	N/A
1966	N/A	N/A
1967	N/A	N/A
1968	N/A	N/A
1969	N/A	N/A
1970	.300057	N/A
1971	.312896	N/A
1972	.285257	N/A
1973	.276818	1.96984
1974	.281643	1.62631
1975	.308906	2.00424
1976	.327913	1.84671
1977	.320422	2.53069
1978	.276063	2.03045
1979	.285990	1.58266
1980	.292126	1.57515
1981	.323810	2.21803
1982	.348819	2.45111
1983	.404447	2.35128
1984	.355896	2.13445
1985	.356735	1.83143
1986	N/A	N/A

TABLE B10a.      MARKETING MARGINS:    MILK

YEAR	RETAIL TO IMPORT	FARM TO IMPORT	FARM TO RETAIL
1967	5.41891	N/A	N/A
1968	5.98540	N/A	N/A
1969	6.85031	N/A	N/A
1970	5.88273	3.67590	.624864
1971	4.23760	2.41490	.569876
1972	3.35911	2.33902	.696320
1973	3.16059	2.22386	.703621
1974	2.39358	1.81332	.757576
1975	3.51989	2.80759	.797637
1976	4.58383	3.65735	.797880
1977	4.98094	3.96642	.796318
1978	6.57571	4.18741	.636799
1979	5.43590	3.06456	.563762
1980	7.18340	5.13673	.715083
1981	3.78711	3.18756	.841688
1982	3.37666	2.79060	.826439
1983	4.23755	4.99812	1.17948
1984	4.76724	4.07395	.854572
1985	4.84560	2.88831	.596068
1986	4.90977	N/A	N/A

TABLE B11.      MARKETING MARGINS:    PUMPKIN

YEAR	FARM TO RETAIL	FARM TO EXPORT	RETAIL TO EXPORT
1960	N/A	N/A	N/A
1961	N/A	N/A	N/A
1962	N/A	N/A	N/A
1963	N/A	N/A	N/A
1964	N/A	N/A	N/A
1965	N/A	N/A	N/A
1966	N/A	N/A	N/A
1967	N/A	N/A	N/A
1968	N/A	N/A	N/A
1969	N/A	N/A	N/A
1970	N/A	N/A	N/A
1971	.625000	1.02204	1.63526
1972	.500000	1.00435	2.00870
1973	.500000	1.23923	2.47846
1974	.533333	1.14516	2.14718
1975	.666667	1.11561	1.67342
1976	.523810	.768866	1.46784
1977	.720000	1.39599	1.93887
1978	.600000	1.10325	1.83876
1979	.696970	1.01498	1.45627
1980	.690909	.960355	1.38999
1981	.692308	.848935	1.22624
1982	.650000	.878811	1.35202
1983	.661538	.854095	1.29107
1984	.642857	.811218	1.26189
1985	.595506	.597613	1.00354
1986	.577000	.860000	1.49000

TABLE B12.      MARKETING MARGINS:    TOMATO

YEAR	FARM TO RETAIL	FARM TO EXPORT	RETAIL TO EXPORT
1960	N/A	N/A	N/A
1961	N/A	N/A	N/A
1962	N/A	N/A	N/A
1963	N/A	N/A	N/A
1964	N/A	N/A	N/A
1965	N/A	N/A	N/A
1966	N/A	N/A	N/A
1967	N/A	N/A	N/A
1968	N/A	N/A	N/A
1969	N/A	N/A	N/A
1970	.450857	.942334	2.09010
1971	.602652	1.14514	1.90017
1972	.500000	.793175	1.58635
1973	.571429	1.05075	1.83881
1974	.529412	.822857	1.55429
1975	.714286	1.87678	2.62749
1976	.744681	1.40986	1.89324
1977	.703704	1.04112	1.47949
1978	.526316	N/A	N/A
1979	.597826	N/A	N/A
1980	.652174	1.70696	2.61734
1981	.485714	N/A	N/A
1982	.504000	N/A	N/A
1983	.562500	.645231	1.14708
1984	.438356	.570594	1.30167
1985	.479452	.369444	.770554
1986	.529000	1.61700	3.05900

TABLE B13.      MARKETING MARGINS:    CORN AND RICE

YEAR	CORN		RICE	
	FARM TO RETAIL	FARM TO IMPORT	RETAIL TO IMPORT	RETAIL TO IMPORT
1960	N/A	N/A	N/A	N/A
1961	N/A	N/A	N/A	N/A
1962	N/A	N/A	N/A	N/A
1963	N/A	N/A	N/A	N/A
1964	N/A	N/A	N/A	N/A
1965	N/A	N/A	N/A	N/A
1966	N/A	N/A	N/A	N/A
1967	N/A	N/A	N/A	1.69663
1968	N/A	N/A	N/A	1.56523
1969	N/A	N/A	N/A	1.49068
1970	N/A	1.05788	N/A	1.59867
1971	.666667	1.77211	2.65817	1.56459
1972	.363636	1.61712	4.44709	1.27003
1973	.714286	1.17629	1.64680	1.39226
1974	.333333	.954799	2.86440	.773443
1975	.300000	.923393	3.07798	.978506
1976	.193548	1.05032	5.42666	1.34418
1977	.594595	4.30418	7.23885	1.53333
1978	.439024	2.67045	6.08270	1.57978
1979	.372881	1.83240	4.91415	1.54327
1980	.452381	3.02654	6.69024	1.55858
1981	.390244	2.27955	5.84134	1.60463
1982	.397727	3.17621	7.98589	2.21106
1983	.454545	3.29300	7.24459	2.28345
1984	.461538	1.84307	3.99333	1.88375
1985	.464286	1.85734	4.00042	2.14432
1986	N/A	N/A	N/A	2.67600

TABLE B14.      MARKETING MARGINS:    CORNMEAL AND FLOUR

YEAR	CORNMEAL	FLOUR	
	RETAIL TO IMPORT	RETAIL TO IMPORT (COUNTER FLOUR)	RETAIL TO IMPORT (WHEAT)
1960	N/A	N/A	N/A
1961	N/A	N/A	N/A
1962	N/A	N/A	N/A
1963	N/A	N/A	N/A
1964	N/A	N/A	N/A
1965	N/A	N/A	N/A
1966	N/A	N/A	N/A
1967	.799827	3.25531	2.26474
1968	.666042	3.43582	3.42419
1969	.426646	6.97074	3.92170
1970	.861567	3.98282	4.20212
1971	.812493	3.53225	3.87157
1972	.781252	3.79443	4.40425
1973	.968410	1.59429	1.77175
1974	1.02160	1.39773	1.63228
1975	1.95385	1.29734	1.92825
1976	1.93603	1.53853	1.79897
1977	.968974	1.46817	2.12499
1978	.756555	1.38323	2.54055
1979	.920180	1.33815	1.89527
1980	1.05639	1.27462	2.12724
1981	.641148	1.65275	2.37734
1982	1.03492	1.84366	2.67299
1983	.820122	1.91706	2.77173
1984	.824585	1.39697	2.22860
1985	1.21512	2.93925	3.20973
1986	.660000	1.32700	2.18600

TABLE B15.      MARKETING MARGINS:   TRADITIONAL EXPORTS

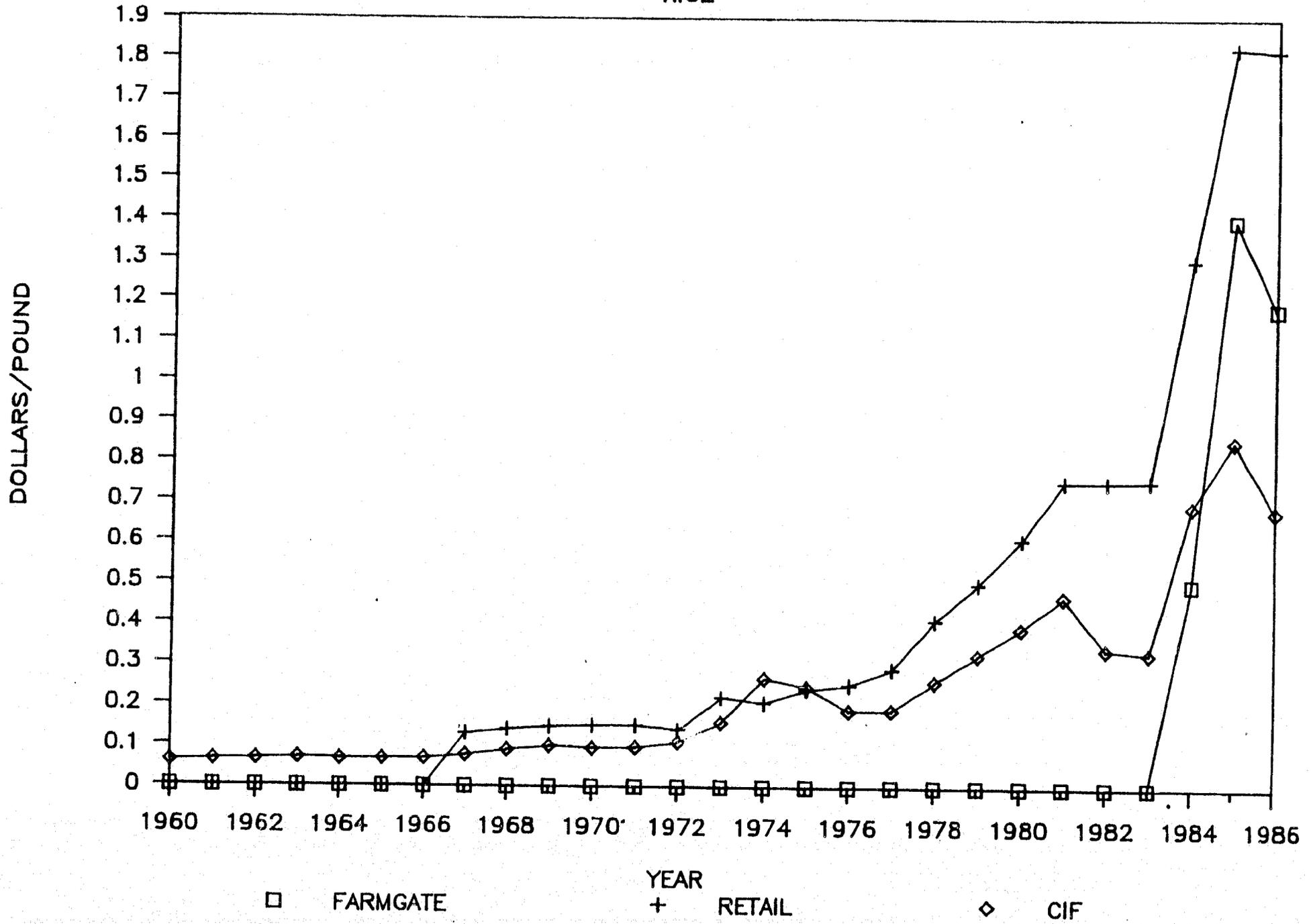
	SUGAR	BANANAS	COCOA	COFFEE
YEAR	FARM TO EXPORT	FARM TO EXPORT	FARM TO EXPORT	FARM TO EXPORT
1960	.712648	N/A	.767087	.490391
1961	.729834	N/A	.690401	.521931
1962	.718718	N/A	.585204	.565729
1963	.683272	N/A	.522530	.611616
1964	.696071	.503942	.787915	.562459
1965	.698256	.500608	.721573	.659599
1966	.651350	.404459	.628172	.656818
1967	.691490	.374021	.503997	.625150
1968	.691874	.240991	.539232	.456836
1969	.684719	.307464	.597331	.453436
1970	.668977	.411104	.587440	.404652
1971	1.05279	.388638	.629099	.359027
1972	.658919	.419120	.620613	.351597
1973	.701493	.261980	.428938	.339816
1974	.419640	.384850	.334282	.326439
1975	.350569	.565102	.514824	.481271
1976	.796503	.771181	.530362	.459938
1977	.690634	.600344	.420096	.375397
1978	.475594	.404490	.207305	.598049
1979	.397474	.402809	.299366	.735133
1980	.406978	.466684	.397905	.576146
1981	.555594	.631017	.567211	.394836
1982	.922893	.673060	.788643	.387752
1983	.749016	.459972	.688439	.279645
1984	.386887	1.01114	.543588	.371853
1985	.365767	.823995	.423378	.244186
1986	.637000	N/A	.515000	.314000

TABLE B16.      MARKETING MARGINS:    TRADITIONAL EXPORTS

YEAR	ORANGE	GRAPEFRUIT	PIMENTO
	FARM TO EXPORT	FARM TO EXPORT	FARM TO EXPORT
1960	N/A	N/A	.577835
1961	.177288	.155151	.578206
1962	.147465	.170582	.792370
1963	.185823	.116396	.680386
1964	.213230	.137574	.717039
1965	.154039	.158769	.650947
1966	.130718	.162925	.719304
1967	.138902	.143000	.716971
1968	.157469	.173143	.714836
1969	.180320	.174498	.730109
1970	.171074	.195488	.719134
1971	.125341	.971045E-01	.672298
1972	N/A	.212317	.673091
1973	.307471	.147155E-02	.668236
1974	N/A	.123350E-02	.683133
1975	N/A	.102255	.640611
1976	N/A	.124628	.616799
1977	N/A	.913011E-01	.980262
1978	N/A	.576298E-01	.774383
1979	.990357E-01	.699578E-01	.564892
1980	.112750	.645243E-01	.612392
1981	.103783	N/A	.665827
1982	.118528	.884931E-01	.610564
1983	.104881	.844350E-01	.613704
1984	.154335	.134925	.497214
1985	.324462	.156622	.579872
1986	N/A	N/A	N/A

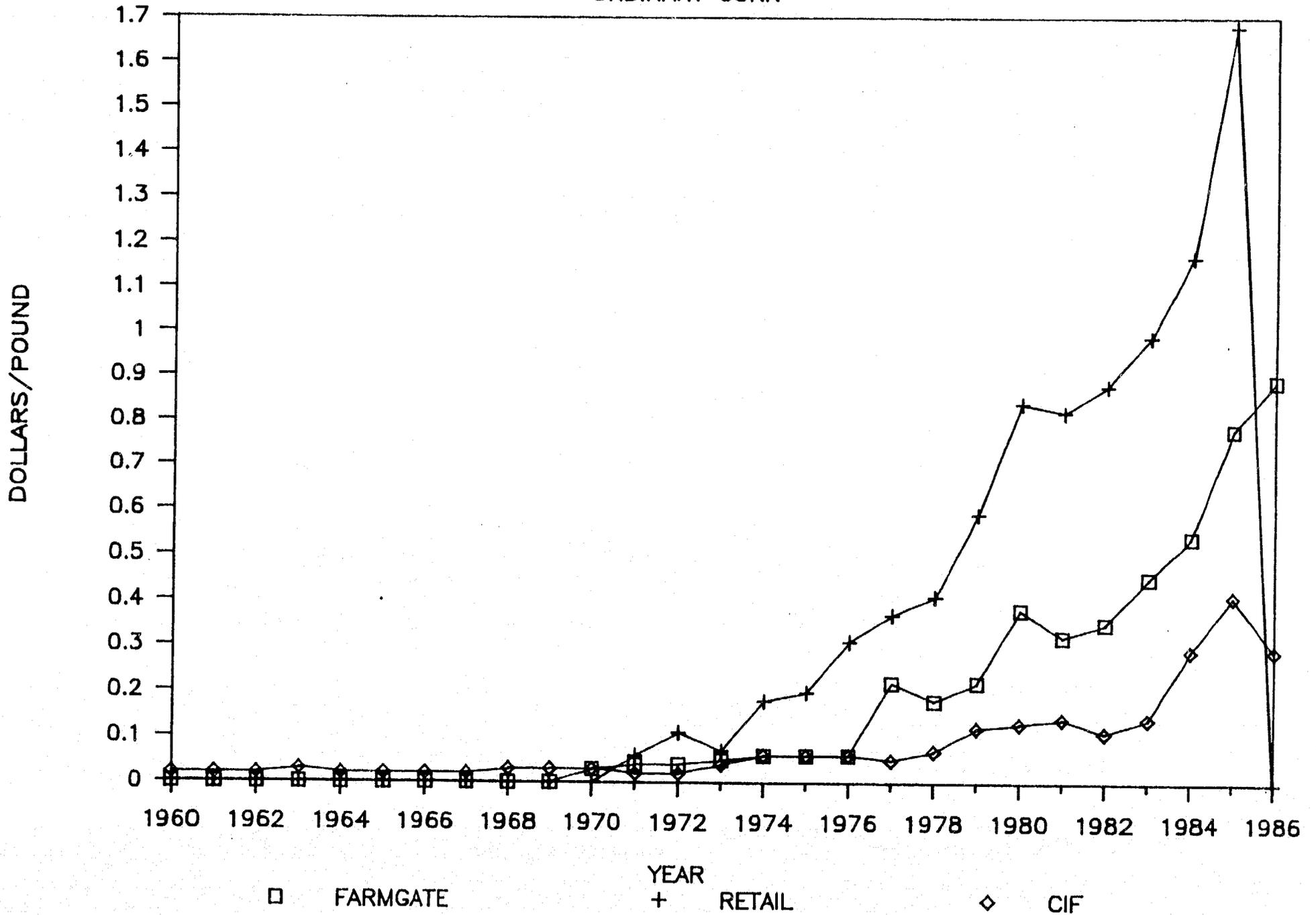
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## RICE



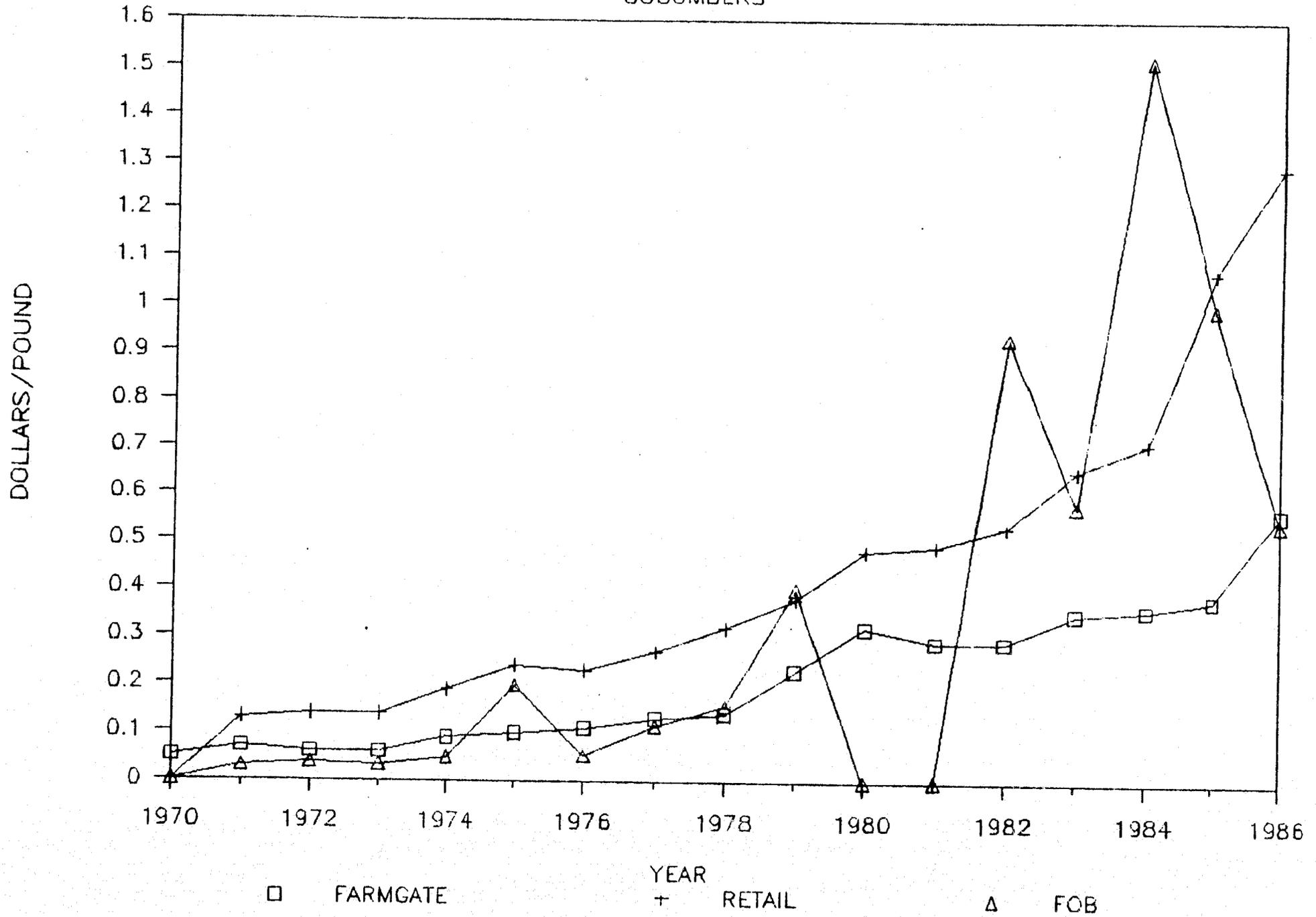
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## ORDINARY CORN

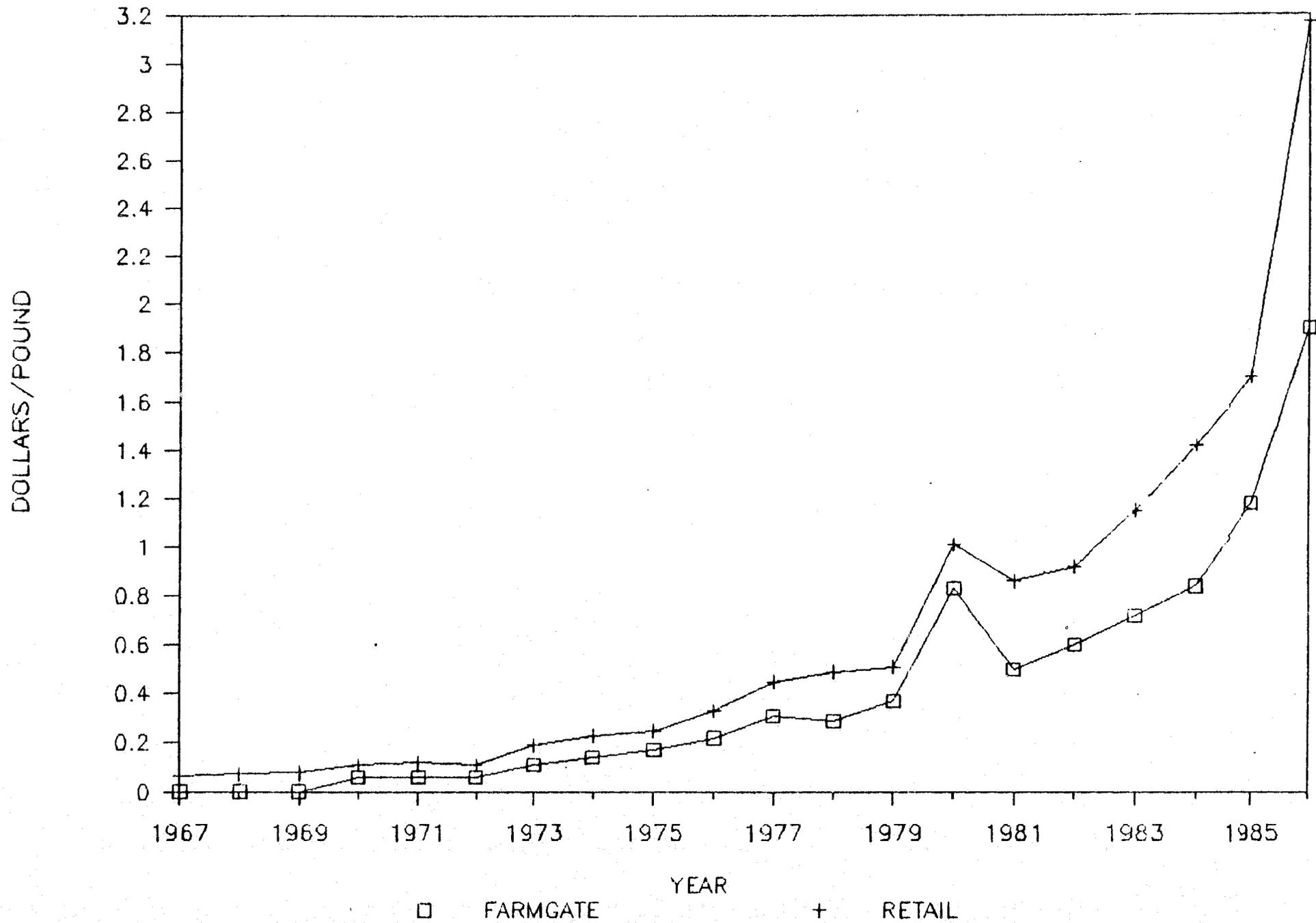


# PRICES

## CUCUMBERS

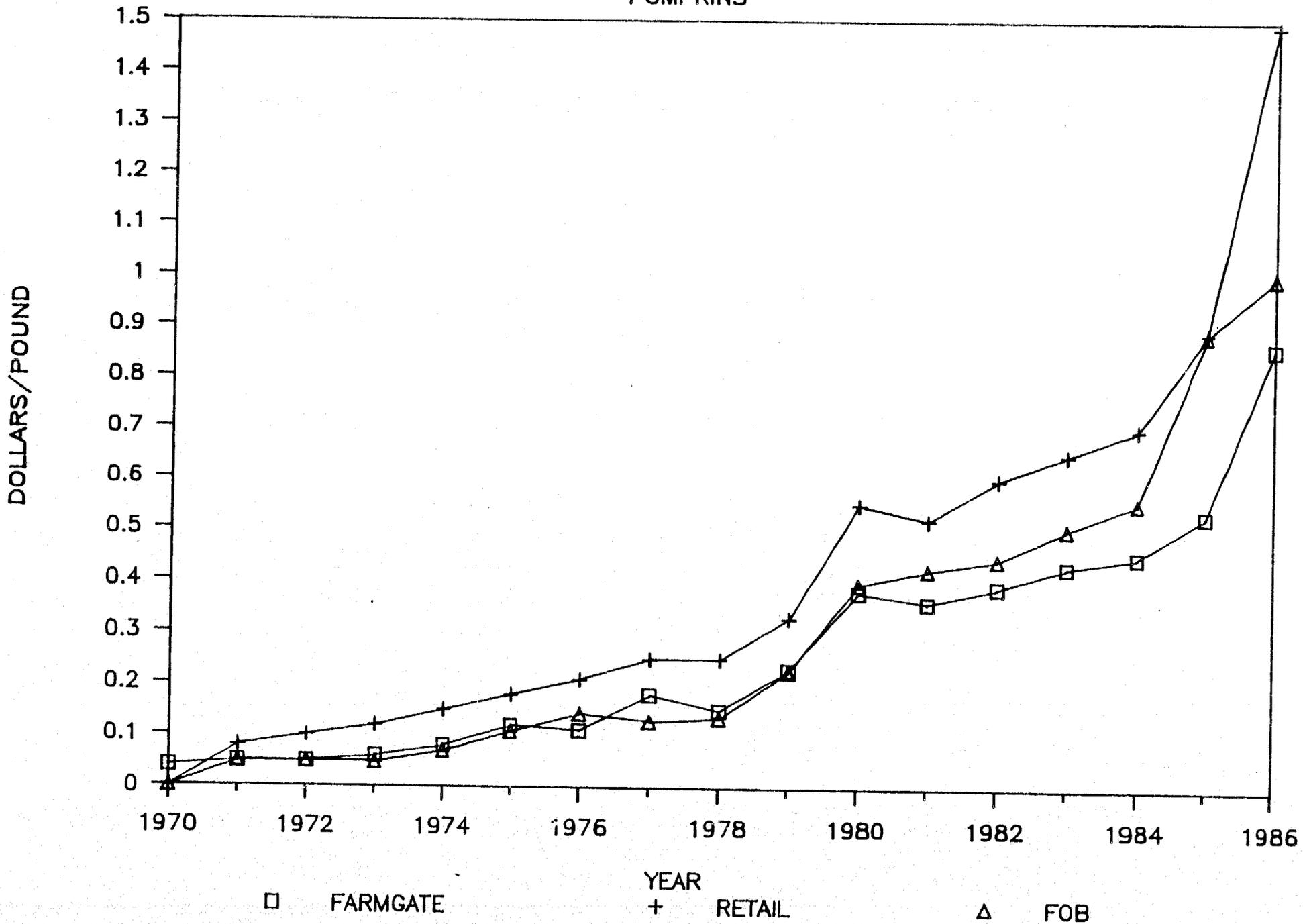


# IRISH POTATOES

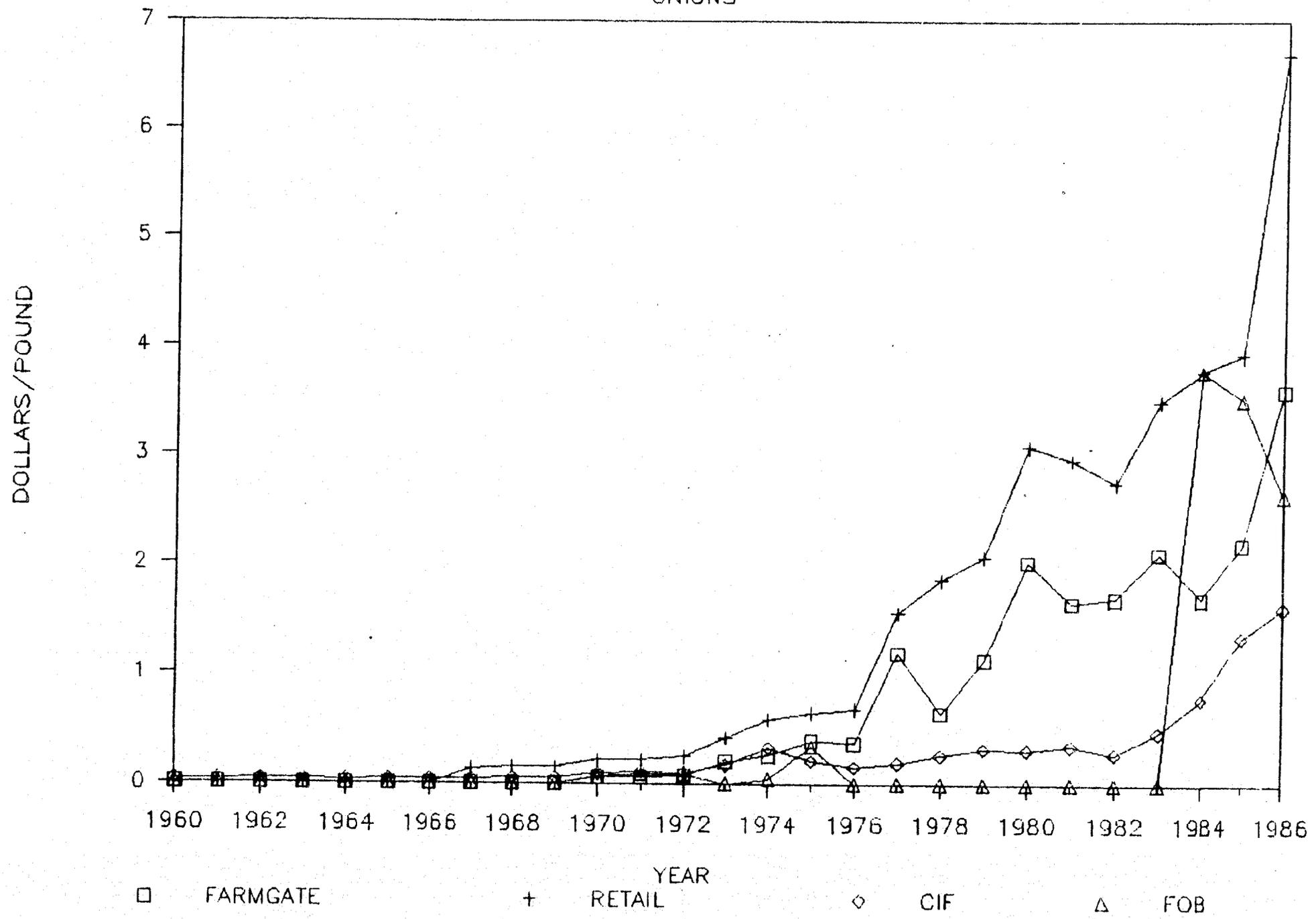


# PRICES

## PUMPKINS

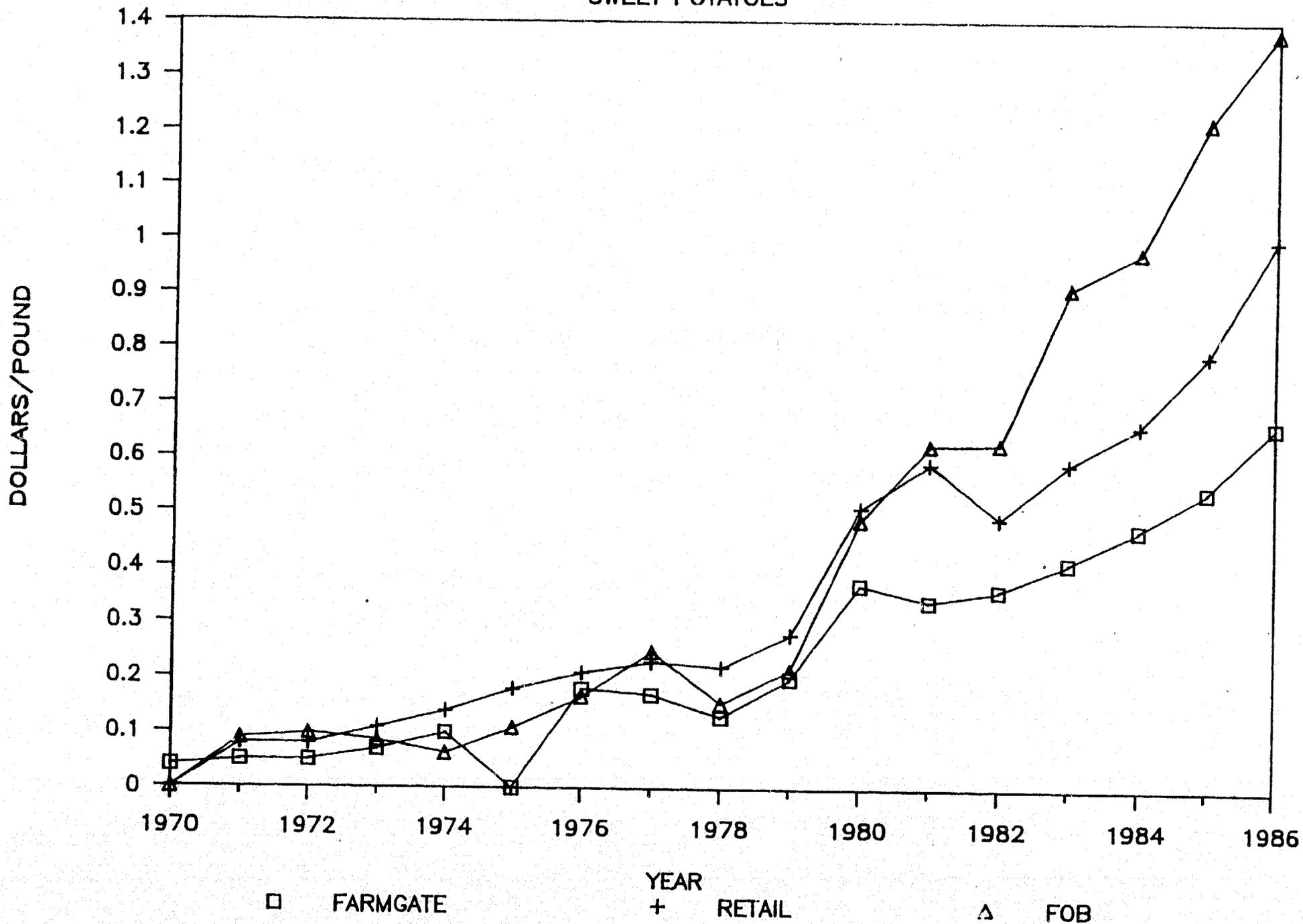


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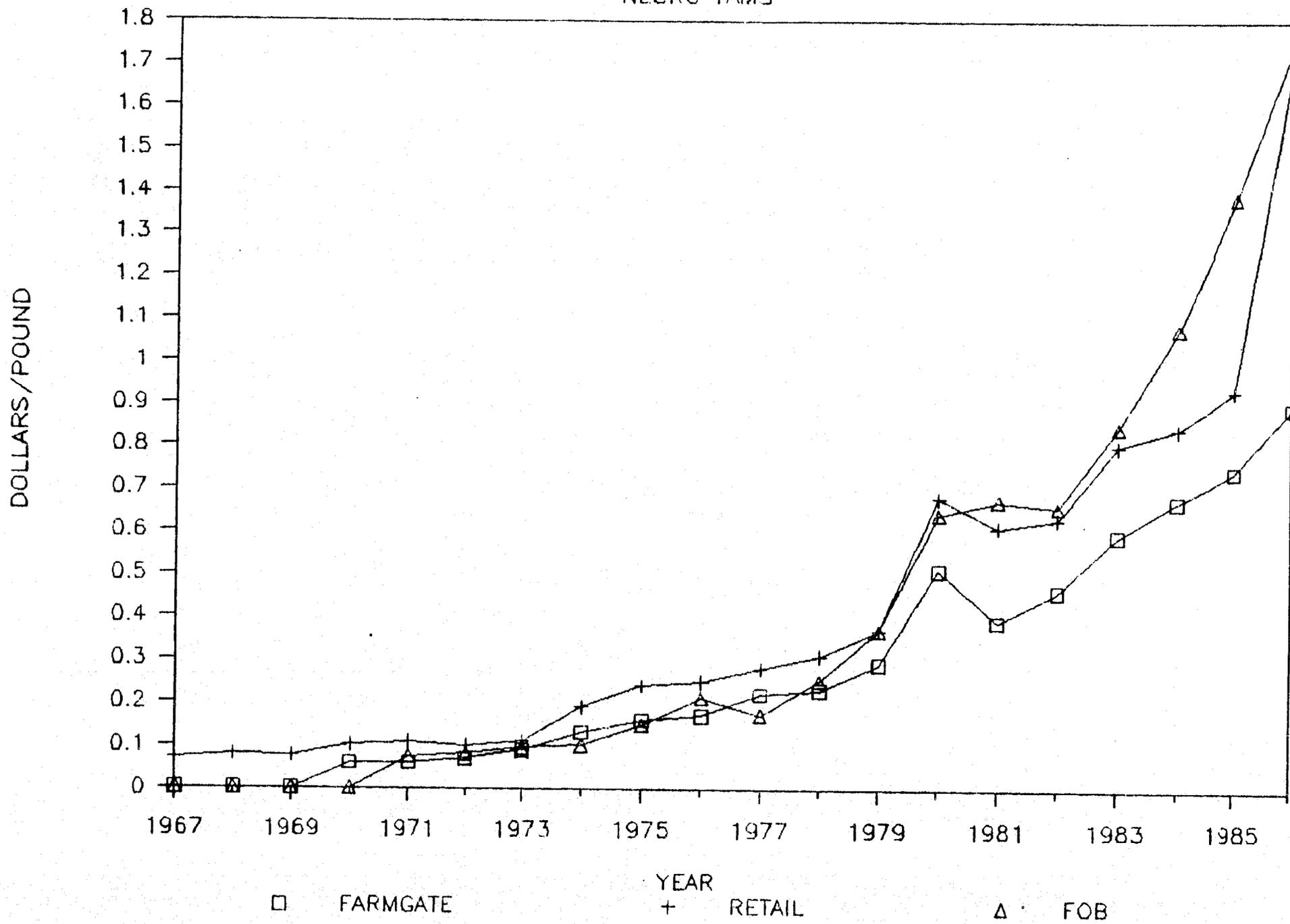


# PRICES

## SWEET POTATOES

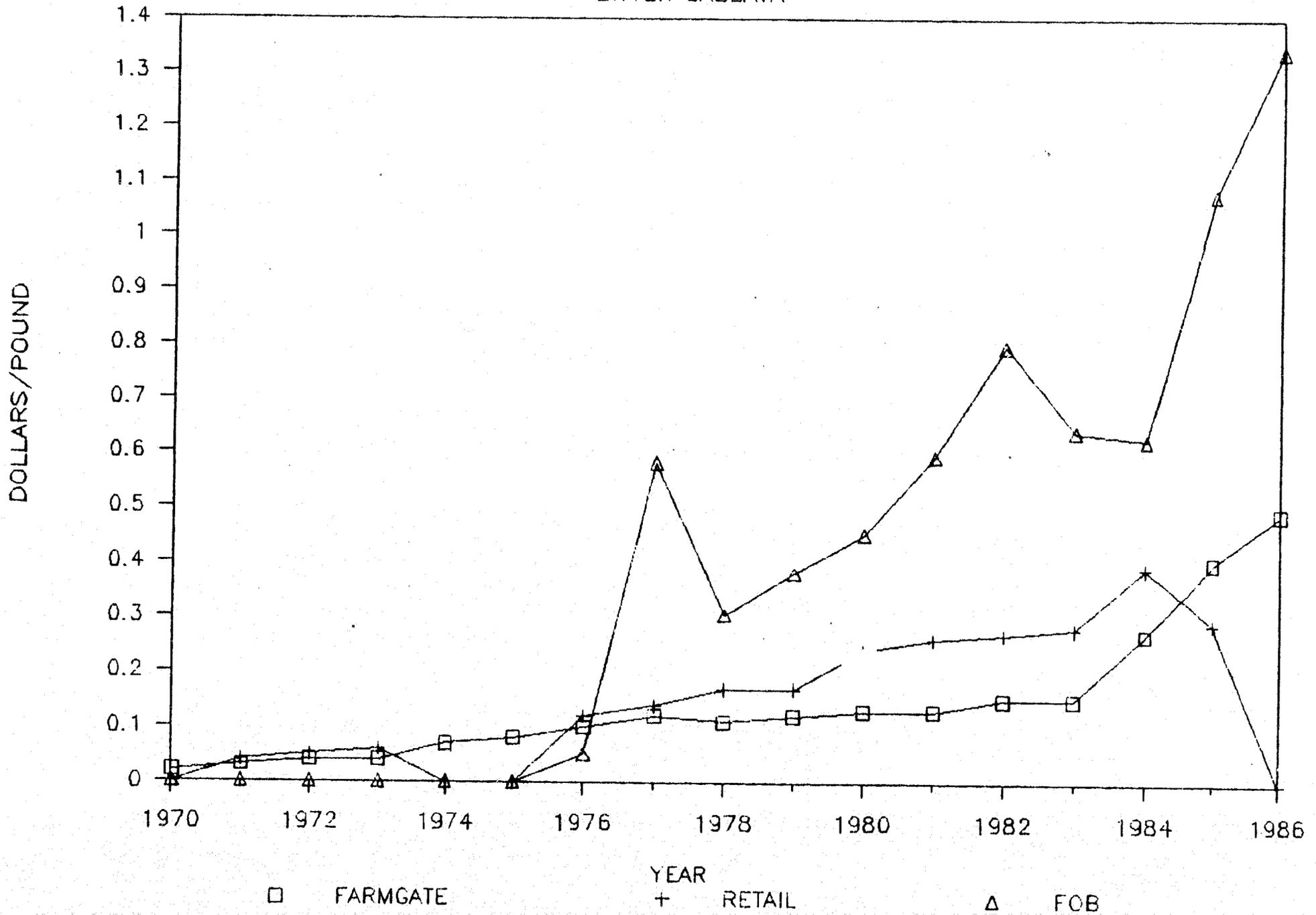


PRICES  
NEGRO YAMS



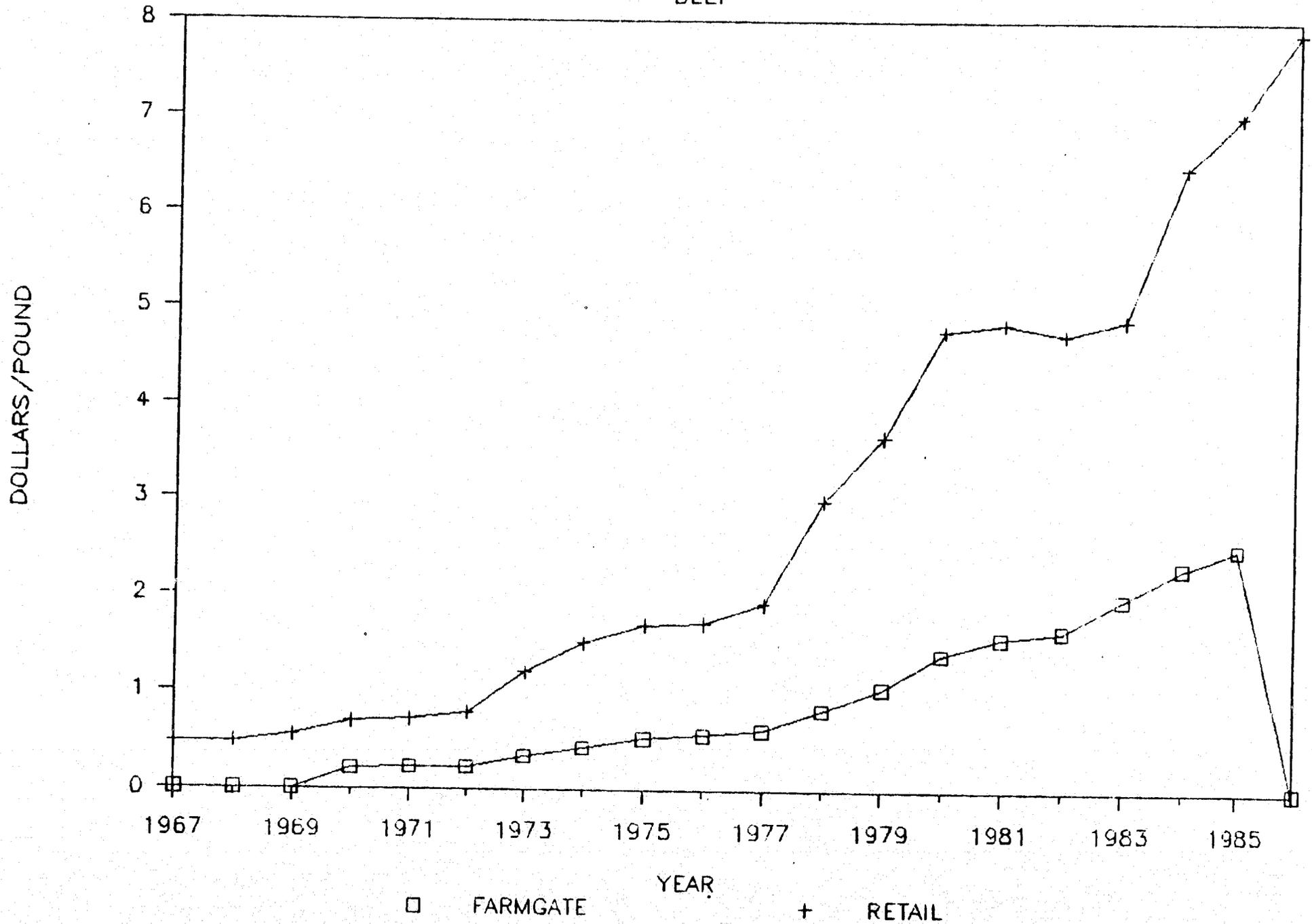
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## BITTER CASSAVA



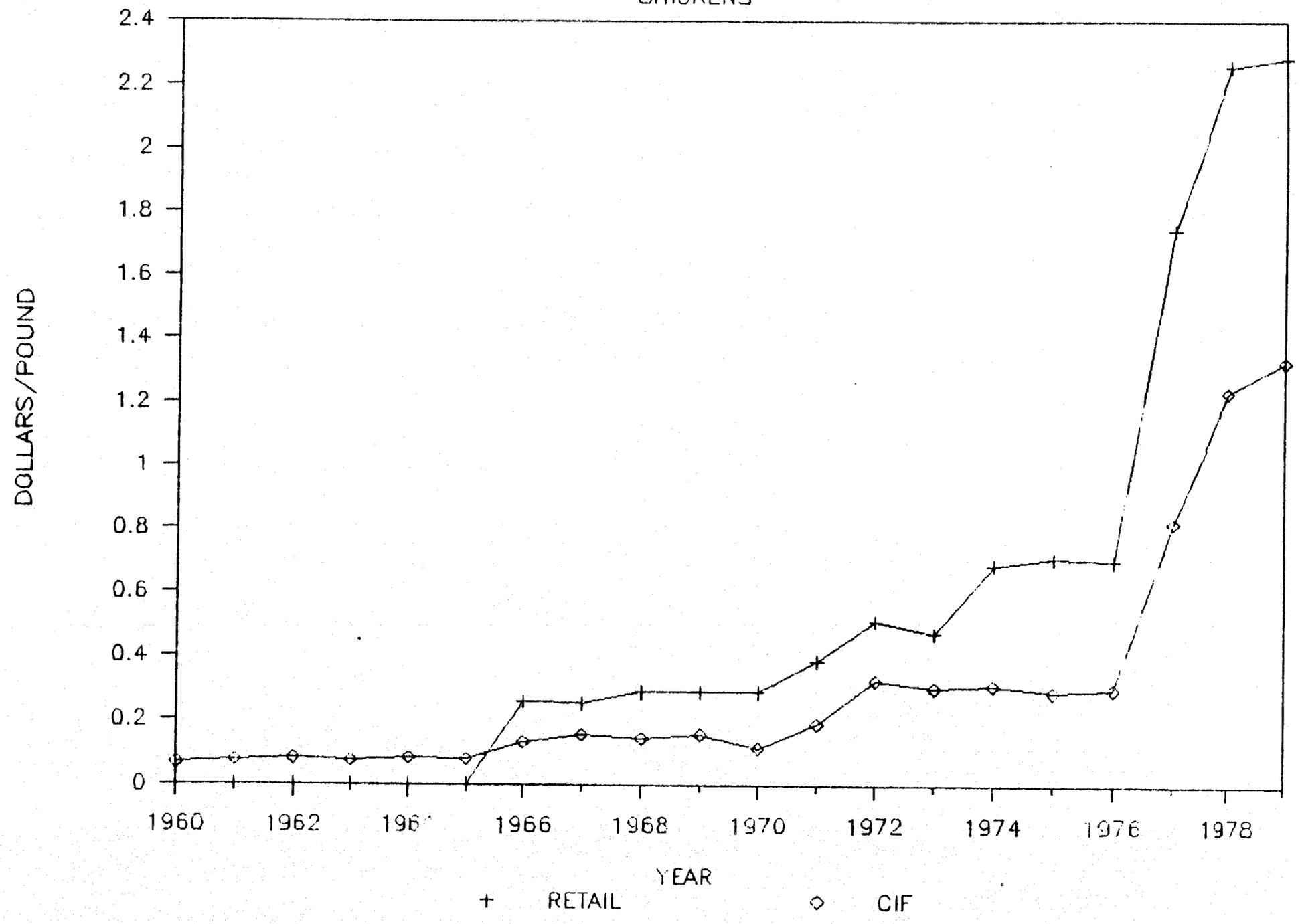
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## BEEF



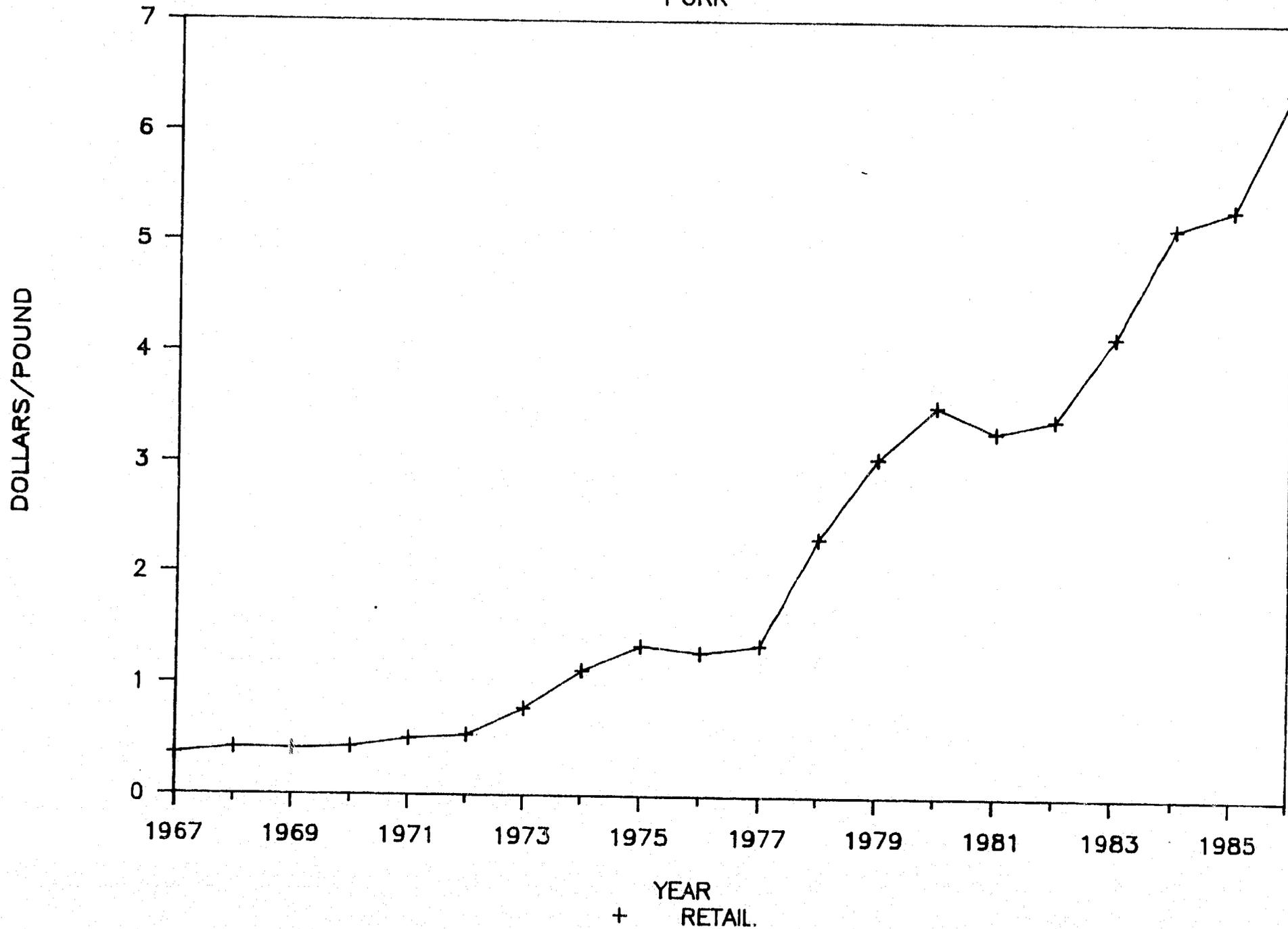
# PRICES

## CHICKENS



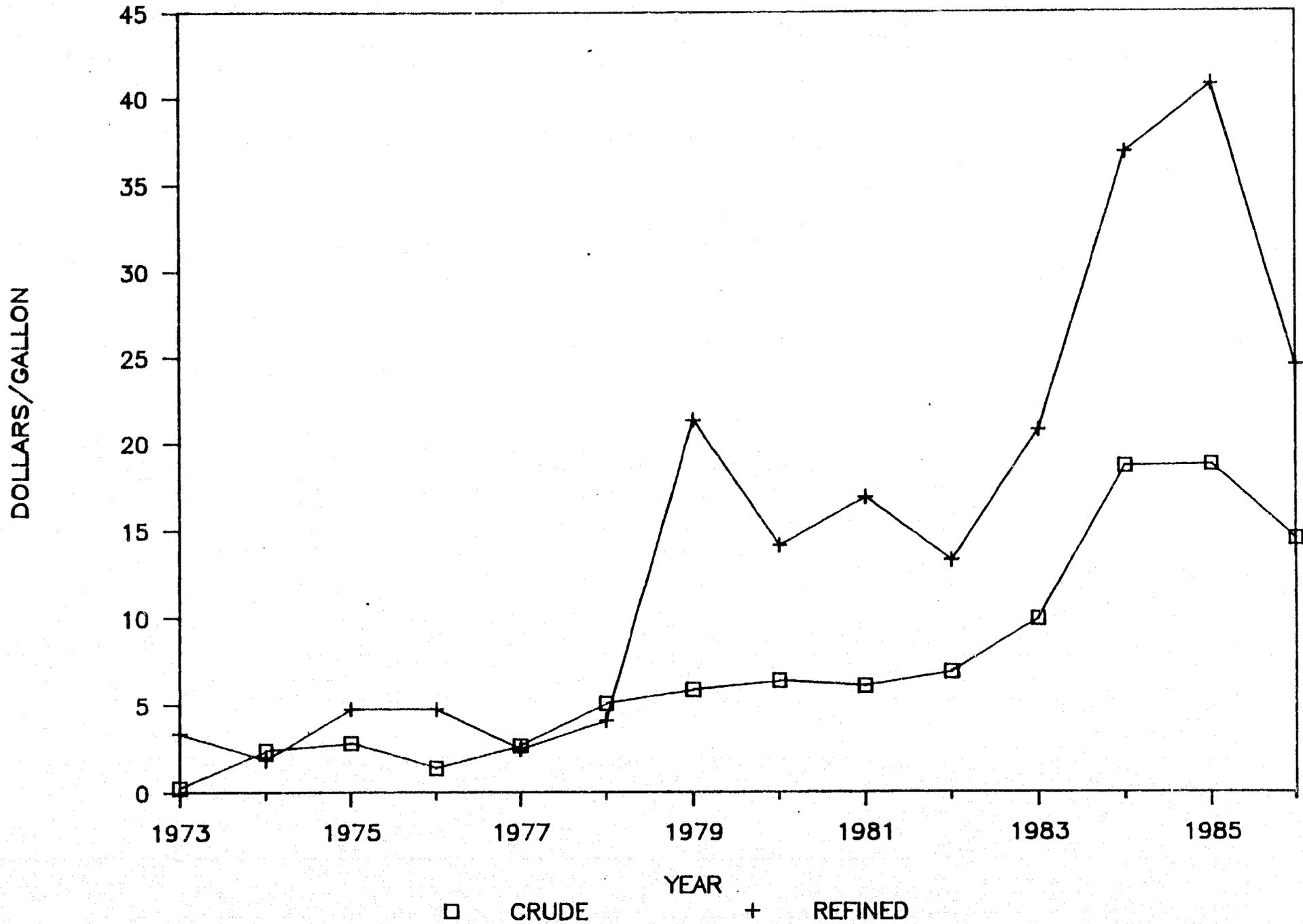
# PRICES

## PORK



# IMPORT PRICES

## CRUDE AND REFINED COCONUT OIL



# CIF IMPORT PRICES

## SOYBEAN OIL

