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~~MARKETING COSTS AND MARGINS~~

by

^{ntemas 1907}
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CHAPTER IX

Marketing Costs and Margins*

I. Introduction

The price difference between the amount the consumer pays for rice and that which the farmer receives for his palay is commonly referred to as the marketing margin. Under conditions of perfect competition, no marketing agency would be able to gain windfalls. In such a situation, the marketing costs -- representing the value added in moving the rice from farm to the consumer including a normal profit -- would equal the actual marketing margin. When windfalls exist, marketing margins can deviate considerably from such costs. The more important of these costs incurred in this process of marketing rice include assembly, transportation, milling, storage, disaggregation, taxes, interests, rents and profits.

From time to time, the question is universally raised as to whether the marketing margin is reasonable. Do the existing marketing margins represent actual cost plus a normal profit or are middlemen receiving an abnormal profit? The question arises because the consumer does not always recognize the services provided by the middlemen and because middlemen normally are few in number relative to farmers on the one hand and retailers on the other. There exists the potential for exercising a control over supply and hence over price. The reasonableness or absolute size of

* The authors are indebted to Aurora Galindo, Meliza Agabin and Rosalinda Marquez for invaluable research assistance while preparing this paper. Amelita Mafibo and Rosalinda Verceluz spent long hours in typing and carefully proofreading successive drafts.

the marketing margin is also questioned because of budgetary constraints. When the government supports high farm prices to stimulate production, and low retail prices to minimize labor costs and the burden on the poor, there is pressure to minimize any subsidy this might entail.

By referring only to the actual magnitude of the marketing margin, it is difficult, if not impossible, to determine its reasonableness. To an important extent, the marketing margin is determined by the nature of the product and the tastes and preferences of consumers as regards services associated with it. Thus in recent years in the United States, the marketing margin for rice -- expressed as a percentage of the consumer's price -- has exceeded 50 percent compared to around 25 percent in Central Luzon.^{1/} In the U.S., consumers prefer to purchase small quantities of high quality rice in attractive and convenient packages. In contrast, in the Philippines, rice usually is retailed in bulk with quality standards much lower. Moreover, the magnitude of the margin can increase with inefficiency of marketing services as well as with windfall profits of the middlemen. On the other hand, low margins may simply mean farmers market their produce directly to individual consumers, depicting an exceedingly inefficient marketing structure. In the Philippines, margins are apt to be low relative to developed countries because fewer marketing services are rendered and because of differences in factor combinations and costs.

In general, the larger the fixed portion of the marketing costs,

^{1/} Richard M. Thuroczy, "Marketing Margins for Medium Grain Rice," Marketing Research Report No. 44, U.S. Department of Agriculture, Washington, D.C. (December 1960) p. 18.

the more stable are the margins. For rice in the Philippines, variable costs of distribution account for a relatively large proportion of the marketing costs. It would be expected that marketing margins would be less stable than for the more highly processed rice in the U.S.

In this Chapter, the following will be described and analyzed:

- 1) Interregional secular and seasonal magnitudes of marketing margins,
- 2) Estimates of marketing costs and functional shares through private and government distribution channels, and 3) Comparisons of marketing margins derived from market prices with marketing costs reconstructed from estimates of activity costs.

II. Characteristics of Farm to Retail Marketing Margins

1. Secular trends. Secular movement of margins for three Philippine marketing channels for ordinary quality rice are shown in Chart IX-1.^{2/} It is interesting to observe that these trends of margins portray three year cyclical movements similar to those observed in the trend of the rice price index.^{3/}

Because rice is a slow moving and storable commodity, margins based on current prices -- as used in Chart IX-1 -- tend to distort the spread between prices at alternative levels of marketing. Average lags of retail from farm prices are shown for each month of the year in Table IX-1. As

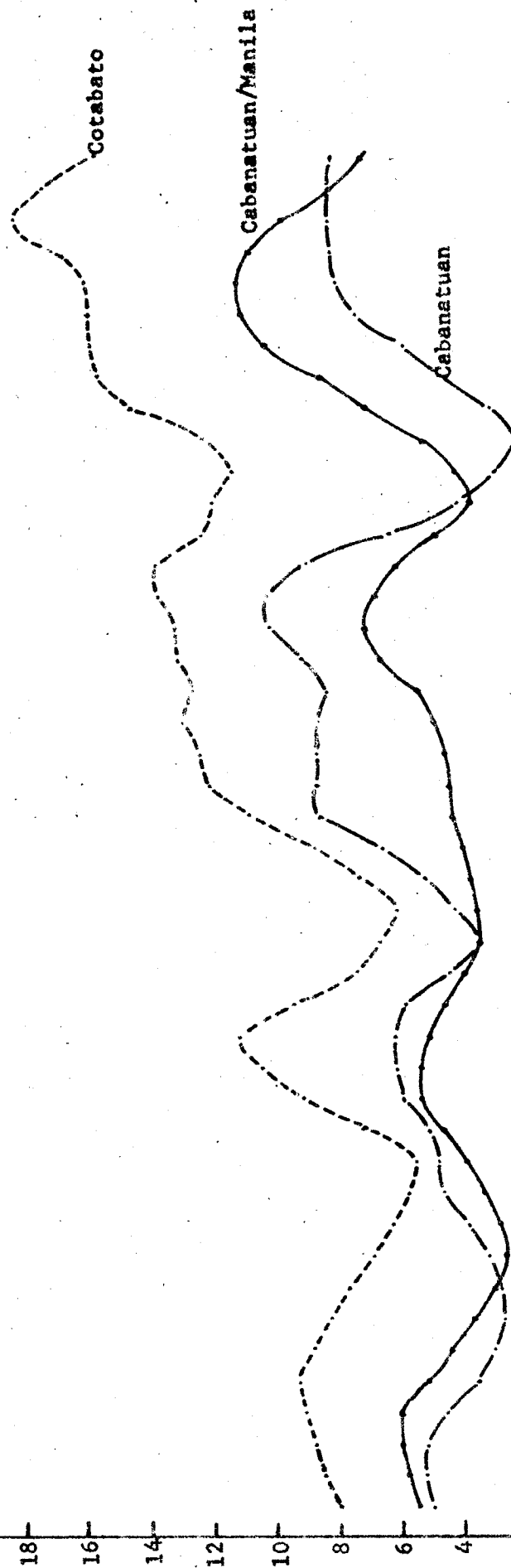
^{2/} Throughout this Chapter, unless otherwise indicated, empirical example of margins refer to those between palay ordinario and rice Macan 2nd class or equivalent.

^{3/} For discussion of these movements, see Chapter VIII, pp. 4 ff.

CHART IX-1

₱/cavan

Trends (12-month moving average) of Farm to Retail Margins in
3 Selected Markets, 1958-1969
(pesos per cavan rice equivalent) ^{1/}



^{1/} Palay ordinario and rice, Macan 2nd class or equivalent.

Sources: Basic Prices, Manila and Cotabato Retail Prices, Bureau of Commerce.
Cabanatuan Retail Price, Central Bank.
Farm Prices, DANR, BAE.

Jan. 1958 1959 1960 1961 1962 1963 1964 1965 1966 1967 1968 Jan. 1969 Month/Yr.

TABLE IX-1

Average Monthly Lag Between Farm and Retail Prices in
Central Luzon/Manila Market, 1958 - 1969^{1/}

X Farm Price	Y Retail Price
<u>Month</u>	<u>No. of Months Lag</u>
January	4 mos. - May
February	4 mos. - June
March	4 mos. - July
April	4 mos. - August
May	3 mos. - August
June	3 mos. - September
July	2 mos. - September
August	1 mo. - September
September	1 mo. - September
October	1 mo. - November
November	1 mo. - December
December	2 mos. - February

^{1/} Palay ordinario and rice, Macan 2nd class or equivalent.

Sources: Basic Prices, Retail Prices, Bureau of Commerce,
Marketing Division.
Farm Prices, DANR, BAE.

might be expected, the lag is greatest after harvest season when the bulk of production reaches the market. As this palay is milled, retail prices tend to follow farm prices downward. The corresponding lag reflects in part the storage service performed by millers. It reaches to four months from January to April in the Central Luzon/Manila market. Then after the second crop and as harvested and stored stocks are drawn upon, millers begin to work on a hand to mouth basis. The lag consequently declines to less than a month in September, just before the new new major harvest.

To correct this distortion, secular trends are hereafter described using average annual data with spreads between alternative price series compared after adjusting for the average lag between farm and retail markets. For example, between 1958 and 1969, the average lag was 3 months in the Central Luzon to Cabanatuan and Manila channels but only 1 month in the Southern and Western Mindanao to Cotabato City channel.^{4/} As indicated above, only part of this lag can be attributed to processing time and transportation. With prices declining at harvest time, millers and traders buy for future needs to provide more months of capacity operation of expensive milling equipment and as a speculation that the post-harvest price rise will exceed interim holding costs. Thus, even under perfect competition, marketing margins will include and are related to costs of holding between seasons.^{5/}

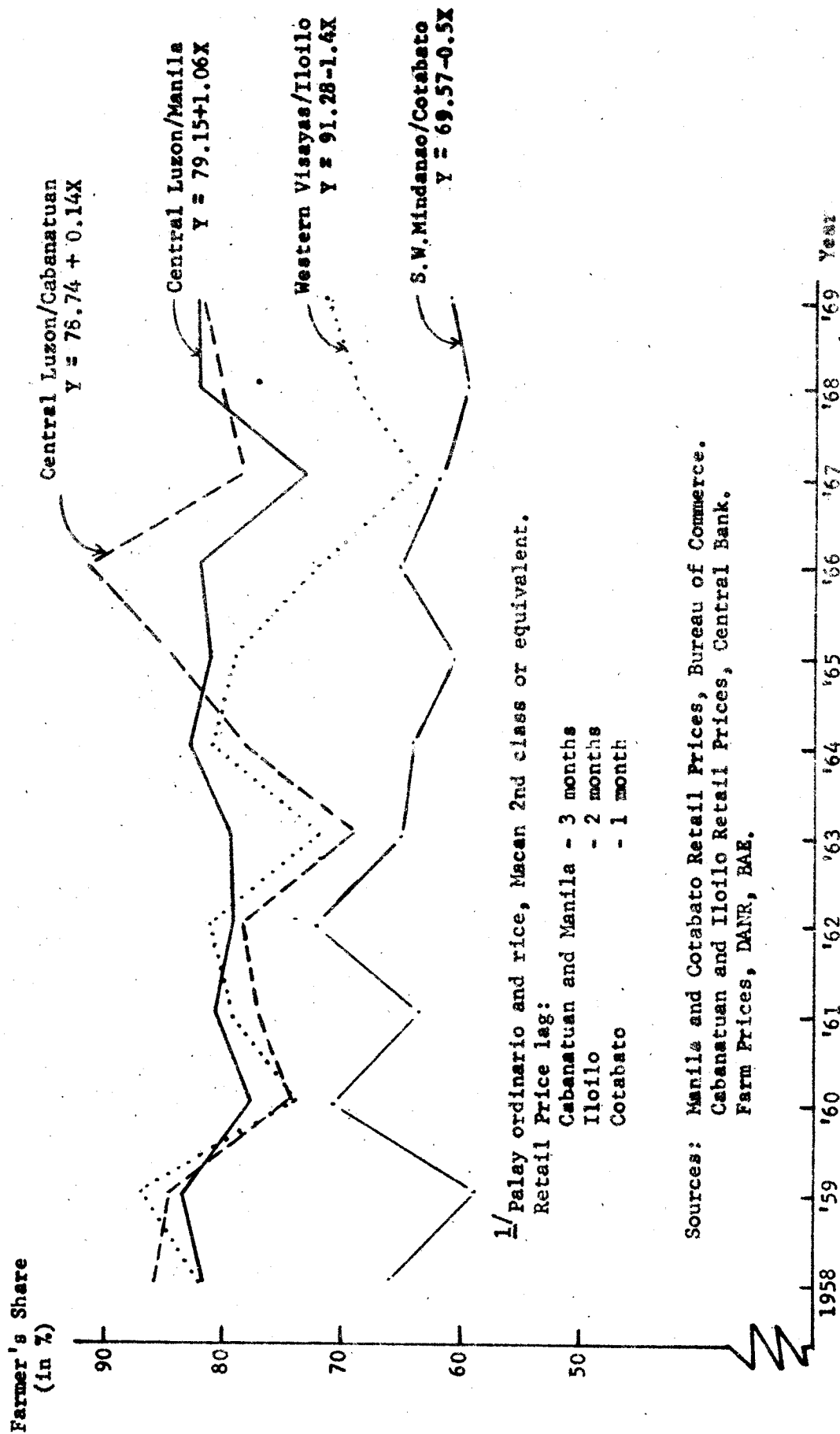
Trends in margins using lagged annual data are shown in Chart IX-2.

^{4/} See Table IX-2 for details, p. ¹²~~14~~.

^{5/} See Chapter VIII, pp. 21 ff. for detailed discussion of holding costs.

CHART IX-2

Farmer's Share of Consumer's Peso Spent on Rice, 1958-1969
(Retail Price Lagged) ^{1/}



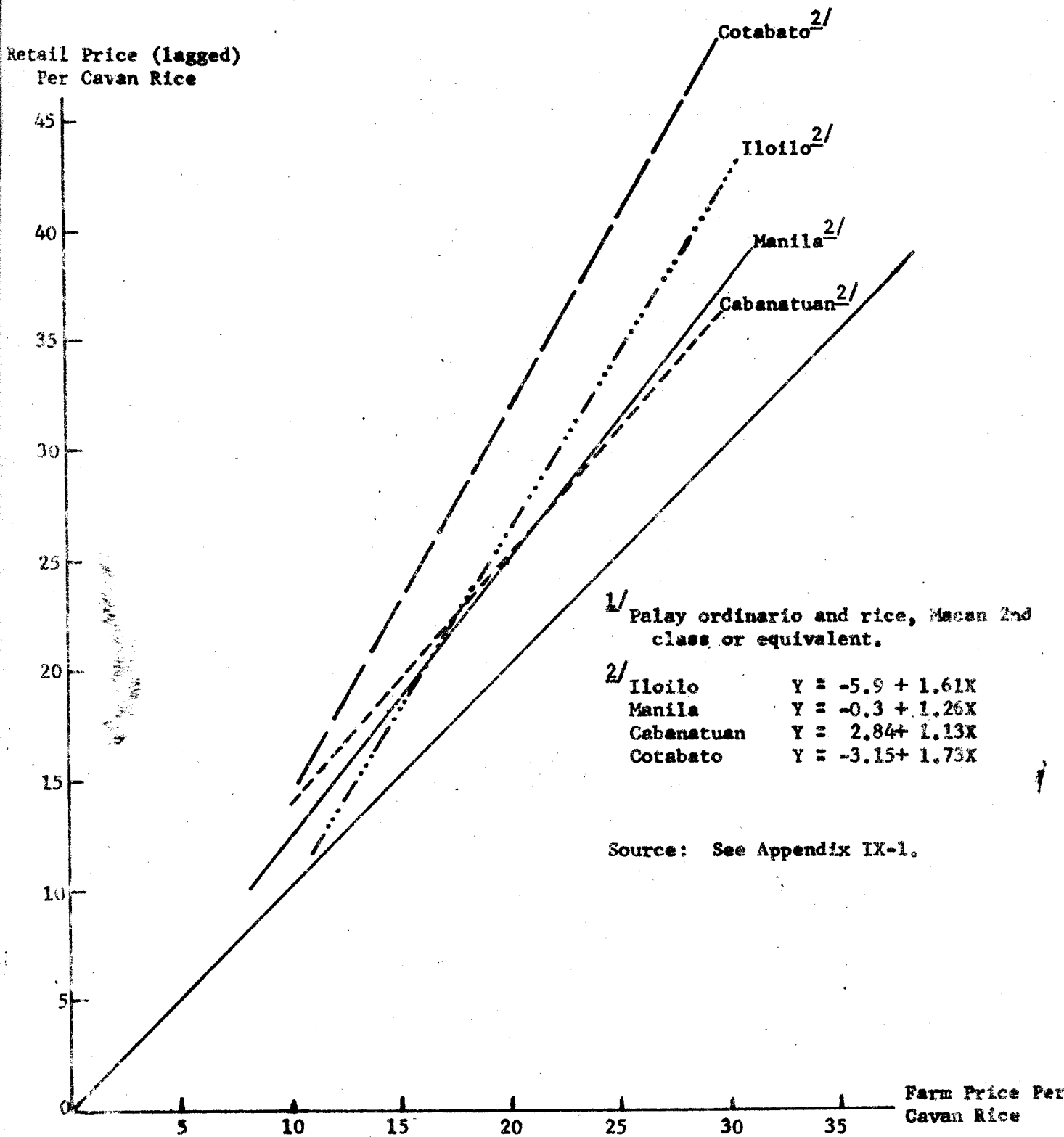
Over the period 1958/69, the relatively larger margins in Iloilo and Cotabato appear to be increasing compared to Cabanatuan and Manila where they appear to be declining. There is no obvious explanation for these trends. Processing technology has held rather constant and there has been little if any change in packaging or quality. Transport in Central Luzon probably has improved relative to Cotabato where production has expanded on the frontier but is this true for Iloilo where water transport must be relied upon extensively within the Western Visayas? It is interesting to note that while the marketing margin in the Visayas closely followed Cabanatuan until 1964, a wide spread developed after that period.^{6/}

Considering that marketing costs of physical components increase proportionately with volume, and that financial and other elements vary directly with price, retail price would be expected to increase somewhat more rapidly than farm prices. As illustrated on Chart IX-3, this assumption proved to be valid for three markets tested, Central Luzon/Manila, Western Visayas/Iloilo and Southern and Western Mindanao/Cotabato. The

^{6/} Studying marketing margins between 1957 and 1963 (with retail price unlagged), Mangahas similarly found low margins for that period for both Central Luzon and Western Visayas and high margins for Southern and Western Mindanao, see Mahar Mangahas, Aida Recto and Vernon Rutten, Production and Market Relationship for Rice and Corn in the Philippines, IRRI Technical Bulletin No. 9, Los Baños, Laguna (1970) p. 65. He suggested that the difference in marketing margins as determined by use of recorded prices may be partly functional rather than real, particularly in Mindanao where the palay normally marketed by farmers contains a high percentage of foreign matter and moisture. Price surveyers are supposed to correct for such conditions, adjusting farm prices to a "clean and dry basis", but understandably corrections may be imperfect.

CHART IX-3

Relation of Retail Prices (lagged) to Farm
Prices in Selected Markets, 1958-1969^{1/}



evidence that farm-retail margins rose with farm prices in these three regions suggests that a large part of the palay may be credit financed or that margins are calculated as a percentage of cost rather than as a flat sum. However, for the Central Luzon/Cabanatuan market, evidence of rising margins accompanying farm price increases was not convincing.^{7/} Does this suggest that Manila wholesalers are the financiers while the costs of millers and traders in Central Luzon do not directly reflect financing and so they maintain a relatively constant margin?

Based on results of similar studies by Mangahas covering the period 1957/63, Ruttan premised that it was difficult to visualize any long-term exercise of market power by middlemen in those regions outside Central Luzon, Western Visayas and Mindanao where constant absolute farm-retail margins were suggested.^{8/} He concluded that the market power was only of local significance and of short duration except in Mindanao where transportation inhibited the rapid movement of rice.

Ruttan's conclusions cannot be taken lightly although studies are

^{7/} In the retail/farm price regression, the hypothesis that the retail price rises by the same amount as the farm price was found acceptable at the 5-percent level (t-test) for the Central Luzon/Cabanatuan markets. For the period 1957/63, with unlagged data, Mangahas arrived at the same conclusion as in this study when he compared prices during the peak harvest months. For the lean harvest months, the Southern and Western Mindanao/Cotabato market was the only one where the proportionate price increase hypothesis was disproved. *Ibid.*, p. 64. This suggests that credit financing of stocks may be less common in Central Luzon during the lean harvest months.

^{8/} Vernon W. Ruttan, "Agricultural Product and Factor Markets in Southeast Asia," *Economic Development and Cultural Change*, University of Chicago Press (July 1969) pp. 504-505.

lacking that provide convincing evidence on other grounds to confirm the comparative efficiency of rice distribution in the Philippines. Margins of approximately 20 percent allowing the farmer 80 percent of the retail price in the Central Luzon/Manila and Cabanatuan marketing channels (see Table IX-2), are also suggestive but they do not confirm distribution efficiency. They appear relatively low when compared to those realized in India in pre-World War II of between 23 and 45 percent, in Java in the mid-1950's of between 28 and 46 percent, and in Thailand in the mid-1950's of 28 percent.^{9/} On the other hand, the Central Luzon margins appear very high compared to the average margin in Taiwan during 1966 of only 7.3 percent.^{10/}

In contrast, the marketing margin of approximately 38 percent found in the Southern and Western Mindanao/Cotabato channel allow the farmers an average of about 62 percent of retail price between 1958/69, which seems high by all Asian comparisons (see Table IX-2). Compared with Central Luzon, the high transport costs constitute a relatively large percentage of the consumers' peso captured between the farmer and the palay wholesaler (10.2 percent compared to less than 2 percent in Central Luzon). Similarly, the percentage of the consumers' peso taken by the processor and rice wholesaler in Cotabato (23.2 percent) is more than double that in Central Luzon (10.1 percent). Considering that mills in the Cotabato area

^{9/} Government of India, Report on the Marketing of Rice in India, Marketing Series No. 75, 2nd Edition, Government of India Press, Calcutta (1955) p. 131; Leon Mears, Rice Marketing in Indonesia, Pembangunan Press, Djakarta (1961) pp. 133 ff.; Narkwasdi Udhis, Farmers' Indebtedness and Rice Marketing in Central Thailand, Bangkok (1958), as reported in Sura Sanittanont, Thailand's Rice Export Tax: It's Effects on the Rice Economy, Kurusapha Press, Bangkok (July, 1967) p. 66.

^{10/} Hsing-Yin Chen, Agricultural Marketing in Taiwan, Joint Commission on Rural Reconstruction, Taipei (July, 1969) p. 73.

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TABLE IX-2

Lagged Margins and Lagged Margins as Percentage of Mean Retail Prices
Macan 2nd or Equivalent in Selected Cities/
(1958-1969)

M a r k e t	Mean Retail Trend Price in Cavan Rice Equiv.	Farm to Wholesale Palay		Wholesale Palay to Wholesale Rice		Wholesale Rice to Retail Rice		Wholesale Palay to Retail Rice		Farm to Retail Rice		(unlagged margin) 2/ Average Margin in Months in P/Cavan
		Months Lag	Average Margin in P/Cavan	Months Lag	Average Margin in P/Cavan	Months Lag	Average Margin in P/Cavan	Months Lag	Average Margin in P/Cavan	Months Lag	Average Margin in P/Cavan	
L A G G E D M A R G I N S												
(pesos per cavan rice equivalent)												
Cotabato	30.55	<1	3.12	1	7.08	<1	1.51	1	8.59	1	11.71	11.09
Cabanatuan	29.43	2	.40	n.a.	n.a.	n.a.	n.a.	1	5.99	3	6.39	5.94
Cabanatuan/Manila	29.11	2	.40	1	2.95	<1	2.67	1	5.62	3	6.02	5.65
L A G G E D M A R G I N S												
(LAGGED MARGINS AS % OF MEAN RETAIL PRICE)												
Cotabato	30.55		10.21		23.18		4.94		28.12		38.33	36.32
Cabanatuan	29.43		1.36		n.a.		n.a.		20.35		21.71	20.18
Cabanatuan/Manila	29.11		1.37		10.14		9.17		19.31		20.68	19.41

1/ Palay ordinario and rice, Macan 2nd class or equivalent.

2/ Farm to Retail Margins calculated from current prices.

Source: Basic data, Cotabato and Manila retail prices from Bureau of Commerce.
Iloilo and Cabanatuan retail prices from Central Bank.
Farm prices, DANR, BAE.

are relatively large and have the potential to be relatively efficient, there is a strong suggestion -- but not convincing proof -- of monopsony power by the middlemen or millers in Cotabato.

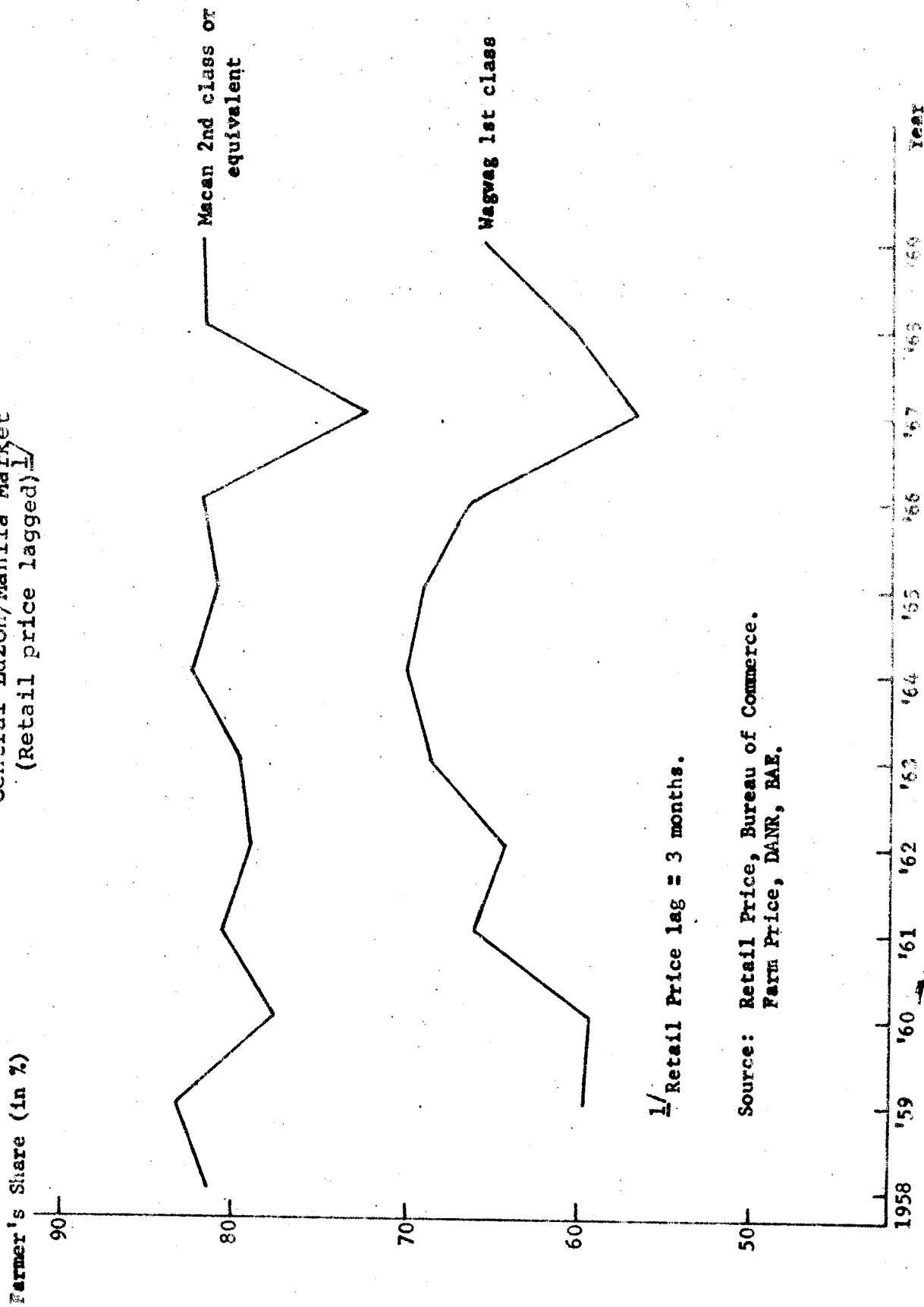
In those channels such as Central Luzon/Manila, where marketing margin is only 20 percent of retail (or less), even a substantial reduction of the margin will have but a small effect on the price received by the farmer. For example, a 25 percent reduction in these margins (from 20 to 15 percent) would raise the farmer's share of the retail price from 80 to only 85 percent. Even if allowance were made for some inefficiency in distribution or collusion in the Central Luzon/Manila channel, it is unlikely that the farmer's return could be increased or the consumer's price reduced appreciably by merely improving distribution.

It would be expected that larger marketing margins might be found for rice of higher than for ordinary quality. Milling recovery of head rice (whole grains) is lower and special care is required in processing higher quality rice. As shown on Chart IX-4, in the Central Luzon/Manila channel, the average farmer's share of the consumer's expenditure on rice (1958/69) was only 64 percent for Wagwag 1st quality compared to about 80 percent for Macan 2nd quality. Unfortunately, detailed studies are not available to permit precise comparison of relative efficiency in marketing these two varieties. Available studies do give evidence that margins increase as consumers demand increased services (milling and handling). Without the packaging required for the American market, the marketing margin for Wagwag of 36 percent is still far below the 57 percent found for medium quality packaged rice in the United States.^{11/}

^{11/}Thuroczy, op. cit., p. 17.

CHART IX-4

Farmer's Share of Consumer's peso spent in Rice
for Macan Ordinario and Wagway 1st class, 1958-1969
Central Luzon/Manila Market
(Retail price lagged) ^{1/}



2. Seasonal variation of marketing margins. Mangahas concluded from his study that marketing margins for rice varied seasonally and inversely with farm prices. They were highest when farm prices were lowest.^{12/} To explain this inverse correlation, it was argued that farm prices are more subject to seasonal fluctuations than are retail prices. This smaller margin in the pre-harvest season also reflects lower holding costs for the shorter period of storage involved for palay purchased at that time of the year. These general conclusions were borne out in the present study over the longer period from 1958 to 1969. The inverse relationship between farm price and unlagged marketing margins is illustrated clearly on Chart IX-5.

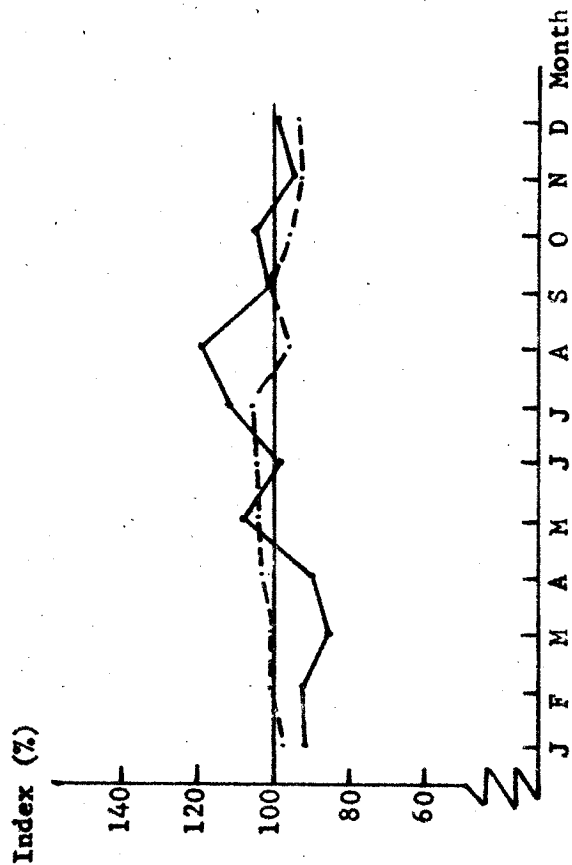
This negative correlation appears logical although it may not describe the actual situation faced by traders. The marketing margins calculated by Mangahas and illustrated in Chart IX-5 represent the price difference between farm and retail prices, both recorded at the same point of time. The resulting margins would be realistic only if palay could be milled and then moved from the farm to the consumer without time loss and if inter-seasonal storage was not required. In the real world, there is in fact a considerable, even though variable, time lag involved, as shown on Table IX-1.

Chart IX-6 illustrates the more realistic situation where the seasonal index of the marketing margin takes into account the average lag for each month between purchase of palay on the farm and its sale as rice

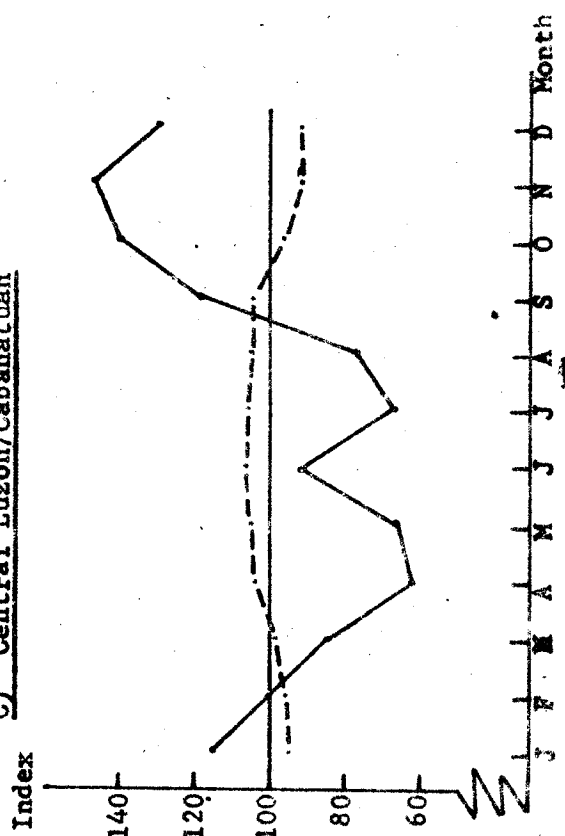
^{12/} Op. cit., p. 69.

Seasonal Indices of Farm to Retail Margins and Farm Prices
Received by Farmers in Selected Markets, 1957-1969^{1/}

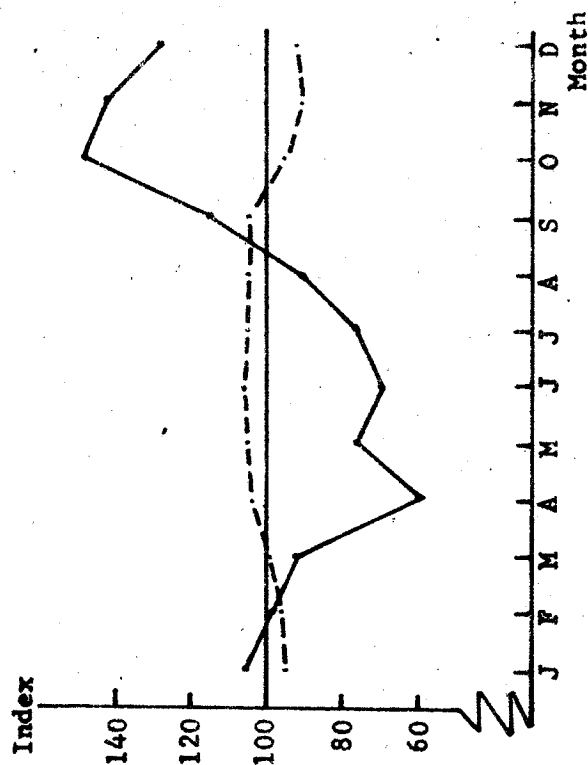
A) S.W. Mindanao/Cotabato



C) Central Luzon/Cabanatuan



B) Central Luzon/Manila



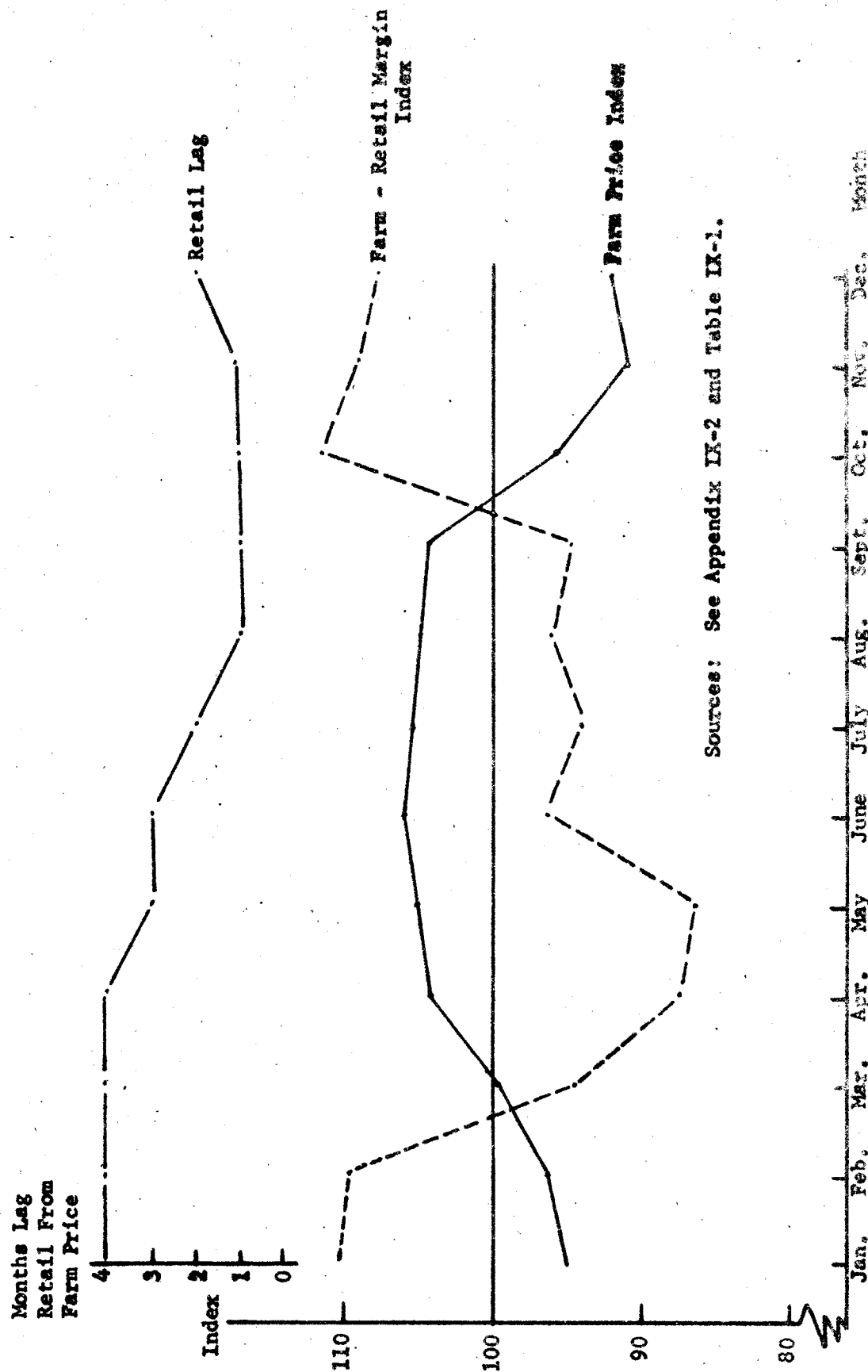
^{1/}Retail/farm prices not lagged.
Palay ordinario and rice, Magan 2nd class
or equivalent.

Source: See Appendix IX-2.

Legend: — Farm to Retail Margin Index
- - - Farm Price Index

CHART IX-6

Comparison of Seasonal Indices of Farm Prices and Farm-Retail Margins (Lagged), Central Luzon/Manila, 1957-1969



Sources: See Appendix IX-2 and Table IX-1.

to the consumer. For example, the index for January reflects the difference between the January farm and the April retail prices (4 months lag); for December between the December farm and the February retail prices (2 months lag). As found with unlagged margins, the lagged margins also vary inversely with farm prices.

These more realistically lagged margins provide the trader with a useful decision tool. By referring to the margin index he can gain guidance for planning palay purchases and sales. To illustrate, the largest margins would be expected for purchases made between October and February. However, a four months holding time between purchase and sale would be expected only in the months of January and February. Thus early season purchases made from October to December would offer greater expected profits than January and February purchases. Average margins are similar but average lag is considerably less. Purchases in March and April, with average lags equal to January and February would yield less profitable expectancies with their lower margins. In other words, expected margins when related to expected holding times indicate that some buyers and sellers make unprofitable decisions. The astute trader would be expected to profit by more rational behavior than the average buyer and seller in the market.

Following the conclusions of Mangahas, seasonal fluctuations of farm prices were found to be greater than of retail prices except in Cagayan Valley region.^{13/} Taking this into account together with the associated inverse seasonal relationship between farm prices and marketing margins, one would expect that the farmer's share of the consumer's peso would vary directly with

^{13/} See Appendix IX-3. Even in Cagayan Valley region, the inverse relationship between seasonal farm prices and margins continued to hold true.

farm prices and inversely with the marketing margin.^{14/}

Because of the leverage gained from small margins arising from retail and farm prices that are much larger, a small percentage change in either the farm or retail price can create a much larger percentage change in the margin. This leverage effect accounts from the exceedingly large seasonal fluctuations in some margin indices. With unlagged margins, in the Central Luzon/Manila channel, the seasonal index of margins ranged from 59 to 148 percent of trend while the farm price index fluctuated between only 91 and 106. After lagging retail prices, the fluctuation of the seasonal index of margins ranged only from 86 to 114. But even this reduced spread was greater than for either the farm or retail price index.

III. Marketing Costs

The specific costs that add together to make up the marketing margins have been estimated for three organizational channels; 1) private channel, 2) government channel (RCA), and 3) the cooperative marketing channel (FaCoMa/GRAMACOP). Marketing costs have been prepared from cost accounting records of the agencies involved, adjusted where it appeared necessary after discussions with experienced millers and traders and reference to cost controls by relevant regulatory agencies and to related field research.^{15/}

^{14/} A tendency for the latter was observed for the United States by Thuroczy. But, in contradiction to the above reasoning, he argued that this finding would support the conclusion that in any given season farm prices are more stable than retail prices, op. cit., p. 17.

^{15/} Following studies have been particularly useful: Presciliano D. Evangelista, et al, "Group C - Report, Marketing of Palay and Rice," in 1st National Seminar on Agricultural Marketing, DANR, Bureau of Plant Industries, Manila (1966) pp. 264-277; Benjamin D. Peredo, Cost of Marketing Palay and Rice in Nueva Ecija, 1961-62, unpublished master's thesis, Graduate School of Agriculture, University of the Philippines, Los Baños, Laguna (1964); and Melecio Tibayan, "An Appraisal of RCA Operations Under the Quedan System," unpublished research report for Program in Development Economics, University of the Philippines, Diliman, Quezon City (1971).

1. Estimates of standard charges and costs. Table IX-3 provides estimates of standard marketing costs for palay and rice. These estimates apply specifically to marketing operations within the Central Luzon to Manila channel. Cost variations can be found even within this area. Outside this area, greater variance can be expected. For example, prevailing trucking rates in Cotabato and Cagayan Valley are higher than in Central Luzon. In Central Luzon, lower transport rates are obtained when palay or rice is carried on backhauls in trucks that would otherwise be returning empty to centers of distribution. Handling charges vary proportionately with labor costs in each region. When sunlight is inadequate and where mechanical drying is available, drying costs would be higher than indicated. Losses depend on the suitability of storage and prevalence of fumigation and rodent controls and insurance rates on the type of storage and proximity of the mill to the storage area.

Peso costs of marketing have increased over the years. The upward movement was particularly pronounced during the year following the de-facto devaluation of the peso in February 1970. Minimum wages and prices of most supplies and equipment increased. At the same time, revenues from by-products kept pace with this increasing trend.^{17/} Both net and gross margins for retailers appeared to be larger in 1971 but the net increase probably reflected market shortages more than permanent increases.

In detailing costs through the three channels, fixed costs (those

^{17/} In custom milling, some millers either charge a milling fee with all by-products going to the customer, or millers retain by-products to compensate for a milling fee. In 1971, with relatively high by-product prices, the latter method was advantageous to the miller unless he agreed to share by-products with the customer.

TABLE IX-3

Estimates of Standard Charges in Marketing Palay/Rice
Cabanatuan/Manila (Cotabato)1/

	1966	1970 After Devaluation
Handling		
Loading: pile to scale, scale to truck ^{2/}	.10/cavan palay	.15/cavan palay (.20/cavan palay)
Unloading: truck to scale, scale to pile ^{2/}	.10/cavan palay	.15/cavan palay (.20/cavan palay)
Storage fee (average of 3 months) ^{3/}	.30/cavan palay (.35/cavan palay)	.30/cavan palay (.35/cavan palay)
Cost, palay/rice sack, new: ^{4/}		
Jute	1.10/piece	1.20/piece
Polythelene	.275/piece	.30/piece
Depreciation of palay sack:		
Jute, used 3 to 4 times		.375/piece
Polythelene, used 2 times		.25/cavan palay (.35/cavan palay)
Drying (solar drying) ^{5/}	.20/cavan palay (.25/cavan palay)	.25/cavan palay (.35/cavan palay)
Losses in warehouse and mill ^{6/} (palay)	----- 1 to 2% per cavan palay	-----
Milling fee ^{7/}	.50/cavan palay (.60/cavan palay)	.60/cavan palay (.70/cavan palay)
Spillage allowance (rice)	----- -0.2% of cavan rice equivalent	-----
Stock insurance ^{8/}	1.5%/a (1.2%/a) ^{9/}	1.5% (1.2%/a) ^{9/}
Stock interest ^{10/}	9-12%/a	12%/a
Trucking ^{11/}	P0.12/ton/km (P0.14/ton/km)	P0.14/ton/km (P0.17/ton/km)
Revenue from by-products: ^{12/}	P0.03/100 kg./km/under PSC motor freight rate	
Bran: D-1 2.25 kg./cavan palay	.15/kg.	.25/kg.
D-3 1.57 kg./cavan palay	.07/kg.	.15/kg.
Mata-mata .225 kg./cavan palay	.08/kg.	.12/kg.
Binlid .25 kg./cavan palay	.25/kg.	.35/kg.
Retailer's margin ^{13/}	.05/ganta	.10/ganta

TABLE IX-3
(cont'd)

Footnotes:

- 1/ Estimated charges may also apply to marketing operations outside these two channels except for charges such as trucking, milling costs, and handling costs which are highly variable with respect to the region of operation.
- 2/ 2 movements involved: Pre-devaluation, P0.05/sack/movement. After devaluation, P0.07/sack/movement increasing to P0.10/sack/movement in mid-1971. In some places, since a cavan of rice is heavier than a cavan of palay, handling fee per cavan is 1 or 2 centavos more for rice than for palay.
- 3/ Estimated as P0.10/month/cavan palay. For custom milling, farmers who have their palay stocks stored and milled in the same mill/warehouse usually are not charged this storage cost.
- 4/ Plastic sacks, which are cheaper than jute sacks, first appeared in the market in the late 1960's.
- 5/ Drying by mechanical dryers is more expensive. This may be a cost paid either by the farmer or the miller or both. (Dryness of the palay is one price determinant for the palay farm price.)
- 6/ Losses can be highly variable, depending on type of storage.
- 7/ Milling fee as charged for custom milling which includes milling cost, storage, and hidden profit of the miller. Either the miller charges the ruling fee and customer gets all by-product, or the miller retains by-products to compensate for the millers fee.
- 8/ Varies with applicable rate and number of months of holding.
- 9/ Insurance for RCA stocks: 2% in 1966 and 3% in 1970.
- 10/ Varies depending on source of financing and length of time of storage.
- 11/ Actual trucking rates vary depending on availability of transport facilities and road conditions in the area.
- 12/ The degree of by-product separation depends on the sophistication of the milling equipment.
- 13/ Only the retailer's margin is more or less standard although margin per ganta for retailers outside city or town markets is higher by 1 or 2 centavos. Margins for profit of the other rice traders are highly variable depending upon prevailing market situations, the volume of sale and trading relationships.

that increase proportionately with physical volume) have been separated for convenience in calculation from those other costs that vary directly with the price of palay. The latter include those financial components such as interest, insurance, bank charges and grain losses. Traders and millers could add a flat absolute amount as profit but evidence suggests mixed practices, varying widely as market conditions permit. For uniformity in estimates, profit margins have been assumed to vary directly with palay prices. Thus, at times when actual average marketing margins are found to be considerably higher than estimates, there is the strong suggestion that market conditions permit larger profit margins than the ones assumed.

For individual millers and warehouseers, profit margins will diverge materially from the average, depending on capacity utilization of capital plant.^{18/} This partially explains the apparent carelessness of millers in assessing storage and milling fees when farmers have a portion of their stored rice milled for home consumption. Nonetheless, this carelessness pays big dividends by helping assure the mill a reliable volume of palay from regular customers.

2. Marketing costs through private channels. From the standard cost estimates given on Table IX-3, itemized total marketing costs have been calculated for the movement of palay through a typical marketing channel

^{18/} Wide profit variations accompanying volume of business are highlighted in the study by Benjamin D. Peredo, E. J. Echon and P. C. Kuhonta, "Rice Mills and Costs of Milling of Palay in Nueva Ecija," The Philippine Agriculturist (November 1957) pp. 97-99. Commercial mills appeared to be able to break even at below 50 percent capacity while profit rates increase rapidly as capacity utilization increases. For an extensive examination of the relationship of milling profits to capacity operation in India, see Uma J. Lele, Food Grain Marketing in India, Cornell University Press, Ithaca, New York (1971) pp. 200 ff.

from farms in Nueva Ecija (in Central Luzon) through the transit market in Cabanatuan to the retailer in Manila. For these specific estimates, the palay is assumed to be collected by a middleman/wholesaler who sells it to the miller for storage and processing. After milling, the rice is stored and distributed to the retailers by a rice wholesaler in Manila. Many other channel combinations are possible as indicated in Chapter V.^{19/} Costs in other channels will vary from the estimates given here and generally would reflect differences in marketing services and scale economies. In some cases money costs may appear low because services are performed by underemployed farmers or middlemen whose opportunity costs are low.

Estimated costs in the Nueva Ecija/Manila channel shown on Table IX-4 are compared with actual marketing margins for May of 1966 and 1970. Of the total margin, it is observed that more than half generally occurs between the palay and rice wholesale markets, arising from storage, milling, handling, transport and profit for the miller and rice wholesaler. Of this, processing and storage at the rice mill account for approximately two-thirds. Margins between the farm and palay wholesaler and between the rice wholesaler and consumer each appear to account for roughly 25 percent of the total margin.^{20/}

The actual margins between the farm and wholesale palay market agree reasonably well with the cost estimates. However, the actual 1966 margin

^{19/} See Chapter V, pp. 11 ff.

^{20/} Cost breakdowns from other Asian countries are difficult to compare because of unique processing practices and lack of detailed costs. In Thailand, where available costs appear comparable, the palay wholesaler accounted for approximately 30 percent of the margin and the miller a little bit less. Sanittanont, *op. cit.*, p. 66.

TABLE IX-4

Comparison of Estimated Costs with Actual Marketing Margins, Private Channel: Nueva Ecija/Cabanatuan/Manila
May 1966 & 1970

	Estimated Costs ^{1/}		As % of Marketing Cost	Month	Actual Marketing Margin ^{2/}		As % of Marketing Margin
	P Per Cavan of Rice Equivalent	As % of Retail			P Per Cavan of Rice Equivalent	As % of Retail	
<u>May 1966</u>							
Palay price at farm gate ^{2/}	P 30.52	80.3		May	P 30.52	76.8	
Costs to wholesale palay ^{3/}	1.62	4.3	21.7		1.90	4.8	20.7
Wholesale palay price ^{4/}	32.14			June	32.42		
Costs to wholesale rice ^{4/}	4.68	12.3	62.6		2.58	6.5	28.0
Wholesale rice price	36.82			August	35.00		
Cost to retail price	1.17	3.1	15.7		4.72	11.9	51.3
Retail price	37.99	100.0	100.0	August	39.72	100.0	100.0
<u>May 1970</u>							
Palay price at farm gate ^{2/}	34.92	78.5		May	34.92	80.3	
Costs to wholesale palay ^{3/}	2.21	5.0	23.1		1.97	4.5	23.0
Wholesale palay price ^{4/}	37.13			June	36.89		
Costs to wholesale rice ^{4/}	5.00	11.2	52.3		4.11	9.5	48.0
Wholesale rice price ^{4/}	42.13			August	41.00		
Cost to retail price ^{5/}	2.35	5.3	24.6		2.48	5.7	29.0
Retail price	44.48	100.0	100.0	August	43.48	100.0	100.0

^{1/}Estimated costs based on Appendix IX-4.

^{2/}Market prices: Farm gate: BAE for cavan of 44 kg. of clean and dry palay ordinario.
Wholesale & Retail: Bureau of Commerce, Marketing Division.

^{3/}Farm to wholesale palay marketing margin.

^{4/}Wholesale palay to wholesale rice marketing margin.

^{5/}Wholesale rice to retail rice marketing margin.

from the palay wholesale market to retail indicates an unusually low margin for the miller or wholesaler and a high margin for the retailer. At least, this can be partially explained by the practice resorted to by millers and wholesalers in recent years whereby the weight of a cavan of rice is reduced from a full 56 to anywhere from 50 to 54 kg. Thus a cavan may yield less than 23.5 gantas of rice to the retailer with the result that part of the apparent retailer's margin is captured between the miller and rice wholesaler. This same discrepancy is not evident in 1970 because retail prices of rice rose slowly after the devaluation, while by-product values rose rapidly.^{21/}

The farmer's share of the consumer's peso of between 75 and 80 percent might not be tenable in situations where pre-harvest loans by middlemen or landlords rule out the possibility of the farm gate price being received by the farmer.

Estimated marketing costs by distributive shares for May 1966 and 1970 are shown on Table IX-5. Excluding miller's margin and rice sack costs, net milling and storage costs account for only about 20 percent of total costs. Middlemen's margins appear highest for retailers but this is only because their margins are gross, including overhead (retailer's estimated net profit was only 8.0 percent of marketing costs in 1966 and 10.1 percent in 1970). The importance of transport and handling costs is evident, approximating between 25 and 30 percent of the total margin. But, this does not provide a convincing argument that bulk storage and

^{21/} At least part of any remaining difference between estimate and actual margins can be charged to the unreliability of market price reports.

TABLE IX-5

Estimated Marketing Costs According to Distributive Shares,
Private Channel: Nueva Ecija/Cabanatuan/Manila
1966 and 1970

	May 1966			May 1970		
	P Per Cavan of Rice Equiva- lent	% of Retail	% of Market- ing Costs	P Per Cavan of Rice Equiva- lent	% of Retail	% of Market- ing Costs
1. Palay price at farm gate	P30.52	80.3		P34.92	78.5	
2. Transport costs	1.26	3.3	16.9	1.94	4.4	20.3
3. Handling	0.61	1.6	8.2	0.92	2.1	9.6
4. Sacks	1.30	3.4	17.4	1.30	2.9	13.6
5. Milling & storage	2.69					
Less: By-products	0.95					
Net Milling & Storage	1.74	4.6	23.2	1.44	3.2	15.0
6. Palay wholesaler's margin	0.40	1.0	5.3	0.46	1.0	4.8
7. Miller's margin	0.67	1.8	9.0	0.77	1.8	8.1
8. Rice wholersaler's margin ^{1/}	0.52	1.4	7.0	0.68	1.5	7.1
9. Retailer's margin ^{2/}	0.97	2.6	13.0	2.05	4.6	21.5
10. Retail rice price	37.99	100.0	100.0	44.43	100.0	100.0

^{1/} Includes overhead costs.

^{2/} Includes overhead costs except transport costs.

Source: See Appendix IX-4.

handling facilities, with their labor saving features, are justified in a country like the Philippines where underemployment and unemployment is extensive and the real cost of labor is often far less than the legal minimum money wage.^{22/}

Table IX-6 provides a comparison of estimated costs and actual margins at the various marketing levels for three different channels; Cabanatuan, Manila and Cotabato City. Again, significant difference is evident between the farmers share of the consumer's expenditure for rice in Central Luzon/Manila (77 to 80 percent) as compared to Mindanao (61 to 63 percent). Some of this difference may be accounted for by the relatively poor condition of the farmer's palay in Mindanao, plus the larger transport costs. In addition there exists the suspicion that market organization may permit some control of price with resulting higher margins for middlemen and millers. Evidence is not conclusive. However, costs in Mindanao from farm to the wholesale palay market appear at least double those in Central Luzon while margins from wholesale palay to retail appear definitely on the high side.

The actual average trend margins for the period 1958/1969 compare reasonably with both the 1966 and 1970 estimates and actual margins in the channels. Their degree of difference from some of the actual and estimated margins illustrates the variance in margins over time under different market conditions.

^{22/}Weitz-Hettelsater recommended the installation of bulk handling facilities for the Philippines without evidence of fully evaluating the real costs, see Economic and Engineering Feasibility Study, Storage, Handling and Marketing of Selected Crops in the Republic of the Philippines, Kansas City, Missouri (June 1968) pp. 263 ff.

TABLE IX-6

Comparison of Estimated Costs and Actual Marketing Margins Through
Private Channels in 3 Selected Markets: May 1966 and 1970
(as a % of retail price)

		Farm to Wholesale Palay	Wholesale Palay to Wholesale Rice	Wholesale Rice to Retail Rice	Farm to Retail Rice
<u>Nueva Ecija/Manila</u>					
May 1966	Lag in months	1	2	0	3
Estimate		4.4	12.2	3.1	19.7
Actual		4.9	6.5	11.9	23.3
May 1970					
Estimate		5.1	11.1	5.3	21.5
Actual		4.6	9.5	5.7	19.8
1958/69 average actual margin		1.4	10.1	9.2	20.7
<u>Nueva Ecija/Cabanatuan</u>					
May 1966	Lag in months	1	- - - - - 2 - - - - -		3
Estimate		1.9		16.6	18.5
Actual		5.8		4.8	10.6
May 1970					
Estimate		5.4		13.8	19.2
Actual		4.6		15.2	19.8
1958/69 average actual margin		1.4		20.4	21.8
<u>S. & W. Mindanao/Cotabato</u>					
May 1966	Lag in months	0	1	0	1
Estimate		n.a.	n.a.	n.a.	n.a.
Actual		21.2	13.9	1.6	36.7
May 1970					
Estimate		n.a.	n.a.	n.a.	n.a.
Actual		8.3	24.7	5.6	38.6
1958/69 average actual margin		10.2	23.2	4.9	38.3

Source: Estimated margins, see Appendix IX-4.

Actual average margins, see Table IX-2.

Market prices for actual margins:

Farm gate - DANR, BAE.

Wholesale and Retail - Bureau of Commerce, Marketing Division.

3. Marketing costs through government (RCA) channels. This channel refers to the one through which RCA (previously NARIC) rice has been marketed. Since 1966, RCA stocks of domestic rice generally have been purchased through the use of quedans (warehouse receipts). Using this system, the farmer receives a quedan upon delivery of his palay to an RCA owned or authorized private bonded warehouse. The farmer is paid upon presenting the quedan at an authorized bank holding RCA deposits. When RCA needs rice for distribution, the miller holding the palay is obligated to mill and deliver 52 cavans of common quality rice to RCA for every 100 cavans of palay. RCA may elect to distribute to retailers directly from the mill or to ship the rice to storage depots in deficit areas from where rice is sold to retailers or through supervised mobile stores direct to the consumers.

Marketing costs have been estimated using the quedan system and with RCA distributing to retailers after storing rice in populated deficit centers. These estimates for the Central Luzon area are shown in Appendix IX-5, separated as to fixed and variable costs, as in the private sector.

Imports that are resorted to when domestic production is inadequate have been distributed exclusively through government (RCA) channels during recent years. Imports involve bank charges for payment clearances, port charges and, as with domestic stocks, storage prior to RCA distribution to retailers or consumers. Distribution cost estimates through this channel are shown in Appendix IX-6.

The margin of profit or subsidy for domestic and imported rice distributed through the government channels is shown on Table IX-7. Leaving

TABLE IX-7

Estimates of Government Subsidy on RCA's Operations^{1/}
(prices in pesos)

A. Palay, locally procured and distributed under RCA's queadan system.		Resulting	Official	Free Market	RCA Actual	Gov't. Subsidy	Gov't. Subsidy
Procurement	Retail	Ceiling	Retail	Selling	as % of	Selling	Price
Price	Cost ^{2/}	Price	Price ^{2/}	Price ^{3/}		Price	
(per cav. palay)			--(per ganta)--				
16.75 ^{4/}	1.59	1.40	1.66	1.41	0.18	12.8	
18.04 ^{5/}	1.70	1.40	1.66	1.41	0.29	20.6	
20.00 ^{5/}	2.00	1.40		1.50 ^{6/}	0.50	33.3	

B. Statement of profit (losses) on imported rice.

Year	C & F Cost	Total Marketing Cost ^{7/}	Total Retail Cost ^{8/}	Actual Sales Price	Profit (Loss) = Gov't. Subsidy	Gov't. (Subsidy) or Profit as % of Selling Price
				--(per ganta)--		
1963	1.12	0.59	1.71	0.80	(0.91)	(113.8)
1964	1.19	0.33	1.52	1.30	(0.23)	(17.7)
1965	1.34	0.64	1.98	1.15	(0.83)	(72.2)
1966	1.24	0.27	1.51	1.40	(0.11)	(7.9)
1967	1.29	0.26	1.55	1.60	0.05	3.1
1971	1.30	0.34	1.64	2.20	0.56	25.4

^{1/} Before 1962, RCA operations undertaken by NARIC.

^{2/} Crop year Philippine retail price average for 1966/67 for Macan 2nd class rice or equivalent.

^{3/} Calculated by dividing total actual RCA sales receipts by total actual quantity sold.

^{4/} Official modal RCA support price.

^{5/} Actual RCA average procurement price calculated by dividing total RCA purchases by total quantity purchased.

^{6/} Estimated.

^{7/} 1963/66, total retail cost per ganta less C & F cost per ganta; 1967 & 1971, total retail cost per ganta less

^{8/} CIF cost per ganta.

RCA administrative overhead not included in cost.

Source: Basic cost data, RCA Plans and Programs Division.

Statement of profit (losses) on imported rice for 1963/66, RCA, Accounting Department (mimeographed);

1967 and 1971, see Appendix IX-6.

out RCA administrative overhead costs, domestic distribution still required subsidies in fiscal year 1966/67 and imports in calendar years from 1963 to 1966. By 1971, while domestic palay was being highly subsidized to the small extent that RCA held any domestic stock, imports were bringing the government a profit margin of over 25 percent of the consumer's peso.^{23/}

A review of Table IX-7 emphasizes the effect of wide fluctuations in world rice prices upon rice import economies. While imports had to be subsidized in 1963 to the extent of 114 percent of retail price and by 72 percent in 1965, world price declines by 1971 provided a profit margin to the government of 25 percent of the consumer's peso expenditure on rice.

4. Marketing costs through cooperative marketing channels

(FaCoMa/GRAMACOP). This channel is one of the distribution paths of rice marketed through private channels.^{24/} It is separated for costing to enable comparison of marketing costs and margins with those in government and other private channels.

This channel was initiated in 1966 when the Grains Marketing Cooperative of the Philippines (GRAMACOP) was organized to distribute rice (and other crops) for FaCoMas. The FaCoMa procures rice from its members, and then stores, processes and transports it to GRAMACOP terminal warehouses. Then GRAMACOP takes over distribution, which up to 1972 was mainly

^{23/} Detailed cost figures are not available to provide an accurate estimate of RCA administrative overhead. After discussions with RCA accountants, it would appear that RCA administrative overhead, excluding interest on old debts, would average at least P10 million a year and possibly considerably more. This overhead continues with but slight variation even though floor and ceiling price levels are maintained without any purchases or sales. In essence, this cost is an insurance that a qualified staff will be available when price stability or support requires. With sales fluctuating widely between 1968 and 1971, this minimum estimated overhead, as a percentage of sales, amounted to 9 percent in 1968 and 1970, 23 percent in 1969 and 71 percent in 1971.

^{24/} See Chapter VI, pp. 11 ff.

to government institutions with relatively small balances to private wholesalers and retailers.

For comparative purposes, 1970 cost estimates are given for distribution of palay from two Central Luzon FaCoMas who are members of GRAMACOP. One is in Bulacan, the other in Nueva Ecija. These cost estimates are shown in Appendix IX-7 and discussed on the following pages in comparison to cost estimates in the other channels.

5. Comparison of estimated marketing costs through private, cooperative and government channels. Comparative costs and margins arising in rice distribution through the 3 marketing channels are shown in Table IX-8. So that the 3 different channels would be on a comparable basis, the same farm gate palay price was assumed in all. In the private sector, farmers who sold at the farm gate received that price. This holds true in the government channel by assumption of an RCA support price at the mill that allows the farmer to cover his transport costs from the farm. Similarly, in the cooperative sector, it is assumed that by paying the market price at the FaCoMa, the farmer can cover his transport costs. To equalize transport costs, it was assumed that all channels serviced farmers and distribution outlets in the same locality. The Bongabong FaCoMa was chosen as the cooperative for comparison because of its location in Nueva Ecija.

In these synthetic calculations, it is not surprising to discover that the farmer's share of the consumer's pesos spent on rice is highest if he sells to the private sector middlemen. The cost estimates are biased towards the private sector in assuming that competition will allow

TABLE IX-8

Comparison of Marketing Cost Estimates Through Different Channels of Distribution, Nueva Ecija/Cabanatuan/Manila
1/
1970 After Devaluation

	Private Channel						Government Channel						Cooperative Marketing Channel (Bongabong)					
	Cost Estimate			Margin			Cost Estimate			Margin			Cost Estimate			Margin		
	P Per As % of			As % of			P Per As % of			As % of			P Per As % of			As % of		
	Rice	Cavan	Retail	In P	Cost	Mktg.	Rice	Cavan	Retail	In P	Cost	Mktg.	Rice	Cavan	Retail	In P	Cost	Mktg.
1. Net to farmer	34.92		78.5				34.92		77.1				34.92		78.1			
1a. Actual palay price, farm gate	34.92		78.5				34.92		77.1				34.92		78.1			
2. To palay wholesale	37.13		83.5	2.21	23.1		35.56		78.5	0.64	6.2		35.56		79.5	0.64	6.6	
3. Ex-rice mill	40.08		90.1	2.55	30.9		40.91		90.3	5.35	51.5		39.92		89.3	4.36	44.6	
4. To rice wholesale	42.13		94.7	2.05	21.4		42.96		94.7	2.05	19.7		42.35		94.7	2.43	24.8	
5. To rice retail	44.48		100.0	2.35	24.6		45.31		100.0	2.35	22.6		44.70		100.0	2.35	24.0	
Total marketing cost				9.56	100.0					10.39	100.0					9.78	100.0	

1/ Cost equations for palay ordinario and rice, Macan 2nd class (or equivalent) at the various marketing levels for the 3 different marketing channels are given below:

1. Net to farmer	$Y_{fn} =$	1.82X																	1.820X
1a. Actual palay price, farm gate, $X = \text{p}19.19/\text{cavan}$	$Y_{fg} =$	1.82X																	1.820X
2. To palay wholesale	$Y_{wp} =$	$1.74 + 1.844X$																	$0.64 + 1.820X$
3. Ex-rice mill	$Y_{mr} =$	$2.33 + 1.967X$																	$3.82 + 1.881X$
4. To rice wholesale	$Y_{mr} =$	$3.90 + 1.992X$																	$6.25 + 1.881X$
5. To rice retail	$Y_r =$	$6.25 + 1.992X$																	$8.60 + 1.881X$

Source: See Appendices IX-4, 5 & 7.

little if any windfall gains. They also exclude the possibility of a lower net to the farmer after high interest payments on pre-harvest loans that obligate sale of part of the crop to middlemen below farm gate price. Preference for the private sector will arise when these income-reducing constraints are absent.

High marketing costs and a low share for the farmer of the consumer's expenditure on rice in the government channel give it the lowest preference under assumed conditions. Preference for this channel would arise at times when the market prices for palay are depressed. At those times, the RCA remains charged to maintain its floor buying price at the mill (P19.52/cavan of palay under assumptions in the example), which would assure the farmer the minimum support price. This channel can be disadvantageous to taxpayers if the farm floor price-retail ceiling price spread does not allow RCA to cover full marketing costs. For example, in 1970 (after devaluation) with RCA selling rice at the ceiling price of P1.40/ganta that cost P45.28 per cavan (P1.93/ganta), RCA would have been subsidizing sales at a rate of 38 percent of retail ceiling price.^{25/} The subsidy would be even larger were RCA overhead taken into account. And given the possibility that government agencies may not be strictly controlled at all times, leakages -- which appear to have been large at intervals in the past -- would impose an additional burden on the taxpayer. Government milling costs are relatively high. Milling costs result from bargaining between the government (RCA) and the millers. As effective implementation of the quedan system requires a large well dispersed group of millers, the government appears to have been at a disadvantage in the negotiations.

^{25/}RCA average selling price in August 1970 was P1.40/ganta, RCA, Accounting Department.

The cooperative channel costs fall in a middle ground under the assumed conditions. Cost from the farmer to ex-mill are lower than in the other channels while wholesale rice distribution costs appear higher than in the private channel. However, the credit disadvantages and associated low purchase prices of some private sector middlemen should be absent in this channel to the advantage of the farmer. As GRAMACOP's activities expand, their per unit distribution costs may decline. In addition, there may be some profits hidden in both the FaCoMa's milling charge and the flat GRAMACOP margin. These would accrue to the farmer's benefit in the longer run. On the other hand, with poor management, the farmer risks losses. Moreover, if low levels of repayment to FaCoMas continue, taxpayers will subsidize part of the advantage gained by the farmer.

Summarizing, under assumed conditions, all channels of rice distribution from Nueva Ecija to Manila appear to have much lower relative costs than in Mindanao. Costs of all are relatively close, with a small advantage under assumed conditions in favor of the private sector, with the government sector costs above those in the cooperative channel. Under more true-to-life conditions, situations can be visualized where each channel would have an advantage. Unfortunately, less than 5 percent of the total marketed surplus of palay is handled in the cooperative sector, limiting its potential usefulness. RCA's purchases (they have never been more than 10 percent of the marketed surplus in any year) can have a material impact in forcing the private middlemen towards competitive margin norms, given the relatively inelastic demand for rice.

IV. Summary and Conclusions

1. Retail prices varied directly with farm prices. These retail variations lagged four months behind farm price changes after harvest and less than 1 month immediately before harvest time.
2. Secularly, margins appeared to be increasing slightly in Iloilo and Mindanao and declining in Central Luzon. The relationship between farm and retail prices was slightly positive given the physical cost components increasing with volume and the financial elements varying directly with price.
3. No absolute measure of channel efficiency was possible given marketing margin variations associated with changes in consumer preferences for services and differences in factor combinations and costs. Nevertheless, with margins in the Mindanao/Cotabato channel double those in Central Luzon, relative inefficiencies and/or market control were indicated.
4. Seasonally, marketing margins varied inversely with price being highest following harvest when rice prices were lowest.
5. Relatively small percentage change in price can induce proportionately larger margin changes, given marginal spreads much smaller than absolute farm and retail prices.
6. Estimated marketing cost equations were constructed for private, government and cooperative channels in the Central Luzon area. These compared generally with sample studies of actual margins in the channels where about half of the marketing costs arose between the wholesale palay and wholesale rice markets.

7. Transportation and handling costs account for one-third of the total margin, milling for 20 to 25 percent, with middlemen and processing margins about 30 percent.

8. Marketing margins in the 3 channels -- private, government and cooperative -- showed a slight advantage for the private sector under assumed conditions of no windfall profits. However, each channel has unique advantages. The government channel can help to prevent opportunity for windfall profits elsewhere while supporting farm prices and limiting retail price advance. This may involve heavy costs to taxpayers. The cooperative channel can give the farmer an exploitation-free market with possibility of some dividends in the longer run as cooperative distribution becomes more efficient.

APPENDIX IX-1

Estimated Linear Relationships Between Retail Price (Lagged) and Farm Price for
4 Selected Markets: 1958 - 1969^{1/}
 (prices in pesos/cavan of rice)

M a r k e t	Mean		Intercept	Slope		Sy,x	t-value
	Retail Price	Farm Price		Coefficient			
Cotabato	31.24	19.88	-3.15	1.73	0.115	6.35 ^{2/}	
Cabanatuan/Manila	30.05	24.09	-0.30	1.26	0.07	3.71 ^{2/}	
Cabanatuan	30.06	24.09	2.84	1.13	0.116	1.12	
Iloilo	29.21	21.81	-5.90	1.61	0.15	4.07 ^{2/}	

^{1/} Palay ordinario and rice, Macan 2nd class or equivalent.

^{2/} Significantly different from one at both .01 and .05 levels.

Source: Basic data, Cotabato and Manila retail prices from Bureau of Commerce.
 Iloilo and Cabanatuan retail prices from Central Bank.
 Farm prices, DANR, BAE.

APPENDIX IX-2

Seasonal Indices of Farm to Retail Margins and Farm Prices Received by Farmers in Selected Markets, 1957/69^{1/}
(Mean of ratios to 12-month moving averages)

M o n t h	Farm to Retail Margin Indices				Farm Price Indices	
	(Unlagged)		Lagged ^{2/}		Central Luzon/ Cabanatuan or S.W. Mindanao/ Cotabato	Manila Cotabato
	Central Luzon/ Cabanatuan	S.W. Mindanao/ Cotabato	Central Luzon/ Manila	Central Luzon/ Manila		
January	114.8	91.0	105.7	110.4	95.1	97.4
February	100.3	92.2	98.7	109.7	96.4	101.1
March	85.0	86.9	90.7	94.5	99.8	101.3
April	62.6	90.6	58.8	87.4	104.4	103.6
May	66.0	108.2	76.1	86.5	105.0	104.7
June	91.8	99.0	69.0	96.3	105.9	105.2
July	67.5	111.8	75.9	94.0	105.4	105.8
August	76.7	119.7	90.9	96.1	104.9	96.0
September	118.1	100.9	115.6	94.8	104.3	101.4
October	140.6	105.0	148.1	113.5	95.8	96.2
November	147.1	95.8	142.0	109.0	91.0	93.5
December	129.5	98.9	123.5	107.8	92.0	93.8

^{1/} Palay ordinario and rice, Macan 2nd class or equivalent.

^{2/} Farm price as shown with retail price lagged 3 months.

Sources: Basic data, Cotabato and Manila retail prices from Bureau of Commerce.
Cabanatuan retail prices from Central Bank.
Farm prices, DANR, BAE.

APPENDIX IX-3

Range of Seasonal Retail and Farm Price Indices, 1957/70^{1/}
(in percent increase from seasonal low to seasonal high)

Region	Farm Index Range	Trading Center	Retail Index Range
Ilocos	17.4	Laoag	12.4
Cagayan Valley	13.0	Tuguegarao	14.3
Central Luzon incl. Manila	16.4	Manila	9.1 ^{2/}
Southern Tagalog	12.7	San Pablo	11.2
Bicol	18.2	Legaspi	8.4
Eastern Visayas	15.4	Tagbilaran	10.7
Western Visayas	21.2	Iloilo	14.3
N. & E. Mindanao	11.7	Iligan	5.8
S. & W. Mindanao	13.1	Cotabato	10.4

^{1/} Palay ordinario and rice, Macan 2nd class or equivalent.

^{2/} 1955/1970 period.

Source: Basic data, Retail prices from Central Bank, Department of Economic Research except for Manila and Cotabato, from Bureau of Commerce, Marketing Division. Farm prices, DANR, BAE.

APPENDIX IX-4

Estimated Costs of Marketing Palay/Rice Through Private Channels: Farmer - Palay Wholesaler - Miller - Rice Wholesaler - Retailer - Consumer (Nueva Ecija to Manila) 1/1966 & 1970

		<u>1966</u>		<u>1970</u>	
		P Per Cavan Rice Equivalent		After Devaluation P Per Cavan Rice Equivalent	
I	Palay price at farm gate X=P16.77	1.820X	X=P19.19	1.820X	
II	Add costs to wholesale palay:				
	a) Transport to mill warehouse ^{2/} P 0.36			P 0.64	
	b) Handling: pickup & at whse. 0.36			0.55	
	c) Depreciation of palay sack ^{4/} 0.50			0.55	
	d) Palay wholesaler's profit ^{3/}	0.024X		0.024X	
	Total cost to wholesale palay	1.22 +	1.844X	1.74 +	1.844X
III	Add storage costs:				
	a) Storage, 3 months average 0.55			0.55	
	b) Interest, 3 mos. @12%/yr. 0.054X			0.054X	
	c) Insurance, 3 mos. @1.5%/yr. 0.007X			0.007X	
	d) Losses in warehouse & mill, 1% 0.018X			0.018X	
	Total cost to milling	1.77 +	1.923X	2.29 +	1.923X
IV	Add costs to wholesale rice:				
	a) Milling costs ^{5/} 0.75			0.95	
	b) Sack - good 2nd hand jute 0.80			0.75(plastic)	
	c) Spillage - 0.2% of rice 0.004X			0.004X	
	d) Miller's profit ^{3/} 0.040X			0.040X	
	e) Less: by-products ^{6/} (0.95)			(1.66)	
	Total cost, ex-rice mill	2.37 +	1.967X	2.33 +	1.967X
V	a) Handling; 2 movements(at mill) 0.10			0.15	
	b) Transport to wholesale whse. 0.70			1.00	
	c) Handling; in and out at wholesale warehouse 0.15			0.22	
	d) Warehouse overhead 0.10			0.20	
	e) Wholesaler's profit ^{3/} 0.025X			0.025X	
	Total cost to wholesale rice	3.42 +	1.992X	3.90 +	1.992X
VI	Add retail expenses:				
	a) Retailers' net costs ^{7/} 0.57			1.38	
	b) Retailers' net profit ^{3/} 0.60			0.97	
	Total costs to retail(Y)/cav.rice Y=4.59 + 1.992X			Y=6.25 + 1.992X	
	Total costs to retail(Y)/ganta 0.195 + 0.085X			0.266 + 0.085X	

APPENDIX IX-4
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Footnotes:

- 1/ Estimated marketing costs in Nueva Ecija/Manila market assuming clean dry palay procured in Nueva Ecija, deposited in a bonded mill warehouse with a 300 cavan per day capacity, 12 hours operation, 200 days per year, 55% recovery by volume of common quality; milled after 3 months of storage with milled rice retailed in Manila and suburban markets.
- 2/ Varies with transport facilities and road conditions in the area. Where roads are poor, transport costs are much higher than prevailing motor freight rates. Transport costs included here are for good 2nd class roads.
- 3/ These net profit margins reflect profit levels reported as customary.
- 4/ Jute sack used 4 times; plastic sacks used 2 times.
- 5/ Break-down of daily expenses in the mill per cavan of rice recovered:

	<u>1966</u>	<u>1970</u> (after devaluation)
1. Fixed charged depreciation, maintenance & repair, insurance & taxes	P 0.33	P 0.35
2. Operating expenses	0.13	0.19
3. Salaries of personnel	0.08	0.11
4. Handling expenses	<u>0.21</u>	<u>0.30</u>
Total	0.75	0.95

6/ Revenue from by-products:

Bran - D-1	0.61	1.02
D-3	0.20	0.43
Binlid	0.11	0.16
Mata-mata	<u>0.03</u>	<u>0.05</u>
Total revenue	0.95	1.66

7/ Retailer's per cavan mark-up:

Less: Retailer's costs/cavan rice:			
Transport to retailer	P0.20		P0.30
Unloading	0.05		0.08
Rents	0.10		0.20
Insurance, license, taxes, depreciation, interest	0.05		0.10
Supplies (paper bags)	0.15		0.30
Labor	0.50		0.70
Losses and shrinkage allowance	0.04		0.10
Other operating expenses	<u>0.08</u>	<u>1.17</u>	<u>0.20</u> <u>1.98</u>
		0	0.37
Plus: Proceeds from sale of rice sack		<u>0.60</u>	<u>0.60</u>
Net profit to retailer/cavan rice		0.60	0.97

APPENDIX IX-5

Estimated Costs of Marketing Palay/Rice Through Government Channel^{1/} (RCA's Quedan System, Central Luzon/Manila, 1966 and 1970)

		<u>1966</u>		<u>1970^{3/}</u>	
		Per Cavan Rice Equivalent		After Devaluation Per Cavan Rice Equivalent	
I	Net to farmer	P	1.820X	P	1.820X
Ia	Palay price at farm gate ^{2/} X=16.77		1.820X	X=19.19	1.820X
	a) Transport		0.36		0.64
II	RCA support price	0.36	+ 1.820X	0.64	+ 1.820X
	Add:				
	a) Depreciation of palay sack	0.50		0.55	
	b) Handling: resacking, scale, piling	0.27		0.41	
	c) Bank remittance fee for RCA credit, 1/32 of 1%		0.001X		0.001X
	d) Interest, 3 months @7.5%/yr.		0.034X	10%/yr.	0.045X
	e) Insurance, 3 months @2.0%/yr.		0.009X	3%/yr.	0.014X
	f) Bank commission @2.0%		0.036X		0.036X
	g) Rice sack, jute second hand	0.80		Plastic	0.75
	h) Milling, incl. milling storage and losses ^{4/}		0.063X		0.093X
	Total cost, ex-rice mill	1.93	+ 1.963X	2.35	+ 2.009X
III	a) Transport to terminal whse.	0.70		1.00	
	b) Handling in and out (terminal warehouse)	0.10		0.15	
	c) Storage	0.10		0.10	
	d) Spillage allowance, 0.2% of rice		0.004X		0.004X
	e) Trucking to retailer ^{5/}	0.20		0.35	
	f) Bank commission-receiving payment, 1.0% of rice		0.020X		0.020X
	g) Retailer's margin incl. costs and profit	.05/g.	1.17	.10/g.	2.35
	Total cost to retail/cavan rice ^{6/}	4.20	+ 1.987X	6.30	+ 2.033X

APPENDIX IX-5

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Footnotes:

- 1/ Palay procurement from Central Luzon, deposited in a bonded warehouse in Central Luzon, milled within 3 months period and milled rice retailed in Manila.
- 2/ Palay price for clean and dry palay ordinario.
- 3/ Actually, no buying done by RCA in 1970/71 except in March 1971. Nominal support during this period was P16 and was raised to P20 in March 1971. To permit comparison, it is assumed here that RCA would have had a support price of P19.52 at the mill in May 1970 if they had been actively supporting the existing farm price for the farmer.
- 4/ The milling, storage and loss costs are hidden because the miller is required to deliver 52 cavans of 2nd quality rice (while conversion is 55 cavans) to RCA for each 100 cavans of palay. In effect, this leaves the miller with a profit which amounts to the cost for milling and storage as follows:

1966:

Miller receives per sack of rice equivalent:

	<u>1966</u>	<u>1970</u>
1) $\frac{3 \text{ cavans rice} \times \text{Price}}{100 \times 0.55} = \frac{3 \times 33.53}{55} = 1.83$		$\frac{3 \times 39.47}{55} = 2.15$
2) By-products	<u>0.95</u>	<u>1.66</u>
Sub-total	2.78	3.81
Less: Milling cost	.75	.95
Storage	.55	.55
Losses (at mill & warehouse)	.38	.44
Handling out	<u>.05</u>	<u>.08</u>
Miller's profit (implied milling cost)	1.73	2.02
Miller's profit as percent of palay price =	P1.05	P1.79
	.063X	.093X

(This profit figure varies, depending on wholesale rice price.)

- 5/ RCA pays delivery costs.
- 6/ RCA administrative overhead costs are in addition to costs shown.

APPENDIX IX-6

Estimated Costs of Marketing Rice Imported Through RCA: Manila Market, 1967 & 1971 (P per ton)

	1967	1970
Pre-unloading charges:		
a) FOB, Bangkok rice price, Y = P476.90		1.000Y
b) Freight		P 56.85
c) C & F Manila, P537.62 = X	1.00000X	
d) Insurance, 0.415% of CIF	0.00415X	2% of FOB 0.020Y
e) CIF Manila	1.00415X	P 56.85 + 1.020Y
f) Superintendence	P 0.78	2.15
g) Bank charges:		
1) L/C commission, 0.5%/mo. 1 mo.	0.00500X 3 mos.	0.015Y
2) Interest on draft, 0.75%/mo. 3 mos.	0.02250X	
3) Bank guarantee, 1.5%		0.015Y
4) Trust receipt conversion, 0.25%/mo. 3 mos.	0.00750X 4 mos.	0.010Y
5) Other fees and stamps	0.35	0.55
h) Unloading:		
1) Arrastre, stevedoring, transport to warehouse, 1 mo. storage	21.21	29.10
2) Overtime, administration, etc.		17.95
i) Distribution:		
1) Handling in terminal warehouse		3.60
2) Trucking to retailer		9.00
3) Handling out of term. warehouse	26.97	3.60
4) Losses, 0.1% CIF term. warehouse		0.60
5) Overtime	7.54	4.00
6) Administrative and others	12.30	14.18
Retailer's gross margin incl. cost and profit	0.05/g. 20.90 ^{1/}	0.10/g. 41.80 ^{1/}
Total retail cost/ton	90.05 + 1.03915X	183.38 + 1.06000Y
Total retail cost/ganta	0.2154 + 0.00248X	0.4387 + 0.00253Y

^{1/}418 gantas = 1 metric ton.

Source: RCA, Accounting Department and Plans and Programs Division.

APPENDIX IX-7

Estimated Costs of Marketing (Palay Ordinario) Through Cooperative (Baliwag and Bongabong FaCoMas) Marketing Agencies (GRAMACOP) After 1970 Devaluation^{1/}

		<u>Baliwag, Bulacan</u>		<u>Bongabong, Nueva Ecija</u>	
		<u>Per Cavan</u>		<u>Per Cavan</u>	
		<u>Rice Equivalent</u>		<u>Rice Equivalent</u>	
I	Net to farmer ^{2/}	P	1.820X	P	1.820X
Ia	Palay at farm gate X=P19.19		1.820X		1.820X
	a) Transport to FaCoMa	0.64		0.64	
II	Palay price at FaCoMa	0.64	+ 1.820X	0.64	+ 1.820X
	Add:				
	a) Handling at FaCoMa	0.36		0.36	
	b) Depreciation of palay sack	0.55		0.55	
	c) Storage, 3 months ^{3/}	0.55		0.55	
	d) Losses at FaCoMa, 1%		0.018X		0.018X
	e) Insurance, 3 months @1.5/yr.		0.007X		0.007X
	f) Interest, 8%/a, 3 months		0.036X		0.036X
	g) Milling costs and overhead ^{4/}	1.20		1.40	
	h) Rice sack	0.75		0.75	
	i) Less: by-products ^{5/}	(1.66)		(1.66)	
	j) Handling to GRAMACOP,				
	3 movements	0.23		0.23	
	k) Transport to GRAMACOP	0.50		1.00	
III	Cost to GRAMACOP	3.12	+ 1.881X	3.82	+ 1.881X
	a) Overhead expense ^{6/}	1.16		1.16	
	b) Average cash allowance ^{7/}	0.19		0.19	
	c) Standard margin	1.00		1.00	
	d) Handling to truck for retailer ^{8/}	0.08		0.08	
IV	GRAMACOP costs for wholesale rice	5.55	+ 1.881X	6.25	+ 1.881X
	a) Retailers net costs ^{8/}	1.38		1.38	
	b) Retailers net profit ^{8/}	0.97		0.97	
V	Total cost to retail. cav. rice	P7.90	+ 1.881X	P8.60	+ 1.881X

^{1/} Palay ordinario and rice, Macan 2nd class or equivalent.

^{2/} Farmer may also incur additional marketing costs (cash or non-cash) which may significantly reduce the net price for his palay, like: 1) farm storage, 2) interest on pre-harvest commodity loan, 3) interest on production loan, and 4) losses during farm storage and handling. Interest charges also can significantly reduce the net to farmer, depending on form of the loan and terms of settlement.

^{3/} Charges assume average cost P0.10/mo./cav. palay, with average total storage of 3 months. FaCoMas differ in making actual charges. Bongabong charges only non-members (P0.10/mo.). Baliwag charges P0.10/mo. to all. Average storage time in FaCoMas may be greater than for private mills except where firm marketing arrangements exist and are operating smoothly.

^{4/} May include some profit for the FaCoMas.

^{5/} Revenue from by-products assumed same as for private mills, where available cost accounting records were more detailed.

^{6/} Includes insurance, storage, bond premiums and spillage cost.

^{7/} Discounts of P0.50 per bag given to cash purchases; average discount per bag will change as ratio credit/cash sales change.

^{8/} See Appendix IX-5, footnote 7 for details. Preliminary costs from GRAMACOP suggest that average costs from their warehouse to retailers may be higher than from more conveniently located private wholesalers. However, for these estimates, transport costs have been estimated to be equal.

