

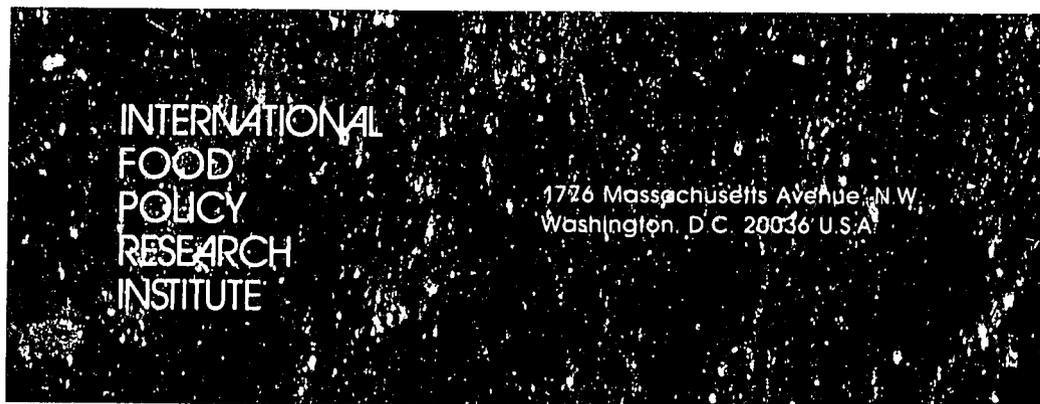
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Marketing and Price Incentives in African and Asian Countries: A Comparison

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Marketing and Price Incentives in African and Asian Countries: A Comparison

Raisuddin Ahmed and Narendra Rustagi

Agriculture in developing market economies is generally organized on the basis of private ownership. The economic environment of farmers operating in these market economies is believed to exert significant influence on the efficiency of resource utilization and the pace of growth in production. The prices of outputs and inputs are generally the principal focus of price policies that are consciously adopted to create a favorable economic environment. The emphasis on prices is understandable. Given a fixed volume of marketing and no other changes, a rise in the prices of output would increase profit directly and proportionately, and a rise in the prices of inputs would similarly decrease profit by a proportion depending on the weight of the input on the cost of production.

Introduction

An incentive mechanism operating through profit motivation is, however, not limited to traditional pricing policies based on macroeconomic instruments for changing output prices (for example, controlling trade and exchange rate policies). Quite a number of other factors exist—sometimes termed nonprice factors—that very effectively influence farm profitability, resource allocation, and production levels. Technological progress, which implies a declining cost of production per unit of output, enhances profit if prices are not proportionately depressed by the supply effects of technological progress. Efficiency of marketing institutions, including infrastructural facilities, determine the extent of price differences between consumers and producers at one or different periods of time and therefore influence farm-level incentives. Farming systems that determine the relation of reward to factors of production with the institutional arrangement can also affect producers' incentives.

This chapter examines the domestic marketing institutions and their influences on the prices received by producers and paid by consumers in various developing countries. Specifically, spatial price spreads, intertemporal price gaps, and regional price differences in selected African and Asian countries are measured and compared. The chapter also attempts to identify the underlying causal factors for these differences, which then form the focus of corrective policies.

Backgrounds of the Selected Countries

Any study involving comparative analysis requires a precaution against drawing lessons from an inappropriate comparison. If countries are in different stages of economic development, then a comparison of certain economic performances among such countries could cause the wrong causal factors to be identified. Similarly, if a country possesses some unusual characteristics that could influence a comparative analysis, such factors need to be considered in drawing conclusions based on intercountry comparisons. To be aware of, if not to mitigate concerns related to, these two conditions, some background information on the countries selected for the study is presented.

Five countries from Africa and four countries from Asia are covered in the study. Of the African countries, Kenya, Tanzania, and Malawi represent East Africa; Nigeria represents West Africa; and the Sudan represents North Africa. Of the four Asian countries, two are from South Asia (India and Bangladesh), and two are from Southeast Asia (Indonesia and the Philippines). These countries were selected because of the diversity in the operation of their market forces and the availability of data. Although the lack of necessary data was a serious constraint in carrying

out the study to its required depth, the reliability of African data is a far more serious problem than its availability.

Some relevant country indicators are presented in Table 11-1. Agricultural gross domestic product (GDP) constitutes only a quarter of total GDP in Nigeria and Indonesia because oil revenues dominate the national income of these two countries. Bangladesh and Tanzania, however, represent economies with more than half of their GDP originating in agriculture. In the rest of the countries agriculture contributed 30 to 40 percent to GDP in 1981. In general, the African countries appear to depend somewhat more on external trade than the Asian countries. Proportions of exports and imports in GDP appear to be higher in Africa than in Asia. As is well known, land-labor ratios are higher in Africa than in Asia. Indonesia and the Philippines represent the fastest growing agricultural sectors in Asia, and Kenya, Tanzania, and Malawi represent the same among the selected African countries. Nigeria is the only country with a negative growth rate in agriculture. Among the selected countries, the 3.0 percent population growth rate in African countries is higher than Asia's 2.3 percent.

The structure of agricultural organizations is also quite different for the two continents, at least with respect to the dichotomy of large and small farms. In the Asian countries family farms vary widely in size and include some that produce for markets and some only for home consumption. Comparable farms in African would be classified as small. In addition, African agriculture includes a large proportion of estate farms or large-scale mechanized farms that are owned and operated by the public or private sectors. The production and marketing of agricultural products under estates or large farms is substantively different from smallholder agriculture. Malawi, in particular, follows a strategy for faster growth in agricultural production through investments in large-scale farming, but this involves a substantial cost to smallholder agriculture. In general the Sudan and Nigeria practice a more liberal approach to private trade than the countries of East Africa. Similarly, in the Asian countries private trade participates more vigorously in domestic marketing than in the African countries. The marketing arrangement in each study country is briefly discussed below.

Kenya

The major commodities produced in Kenya are maize, wheat, beans, coffee, tea, cashews, and sugarcane. Parastatal organizations buy, transport, and sell the foodgrains and export crops. These organizations originated in the marketing policies developed by European producers to exclude African producers and traders from export markets. The National Cereal and Produce Board controls the marketing of most cereals as a public monopolist, and private trade is illegal. This monopolistic position is further enforced for maize, for example, by restrictions on

movements of grain between surplus and deficit districts. Although these restrictions have been recently relaxed to some extent, the practice has not been completely abandoned. Nevertheless there is a thriving illegal parallel market, particularly in the primary level. About 60 percent of the maize marketed by smallholders on the primary market level is handled by private traders in the informal parallel market. The legal public monopoly in marketing and the associated restrictions impose implicit transaction costs for farmers, which, if they could be accommodated in the estimated real prices, would show that the real prices received by farmers are lower than the announced prices.

Tanzania

The main crops in Tanzania are maize, wheat, paddy (rice), coffee, cashews, cotton, and sisal. In the past private trade was banned, and marketing was controlled by cooperatives or by parastatals. Cooperative marketing was a populist movement that became the backbone of the struggle for independence in the 1950s. After independence the cooperatives expanded from 172 in 1952 to more than 2,500 in 1974 because of direct government intervention. They were dissolved in 1976.

As early as 1966, the government realized that the marketing costs of the cooperatives were increasing and that the cooperatives were unable to contain these losses. In 1969 the Ministry of Agriculture observed that the cooperative marketing services employed excess resources, particularly labor; paid excess rates for service; and lost produce in handling, storage, and transit.

To reverse this trend, the entire marketing function was turned over to public parastatals. These marketing parastatals were to purchase agricultural products directly from villages and transport, process, store, and sell such products to urban consumers. Costs continued to rise, however, because parastatals suffered from mismanagement and operational losses. In response to the growing awareness of the operational deficiencies of parastatals, a commission to investigate the possibility of reinstating cooperatives was appointed in 1980. It strongly recommended reestablishment, therefore preparations and planning for a transition from the crop authorities were undertaken. Legislation approving the reformation of cooperatives was introduced in 1982 and executed.

Malawi

The main commodities produced in Malawi are tobacco, groundnuts, maize, and cotton. The Agricultural Development and Marketing Corporation (ADMARC), a parastatal, plays a significant role in both marketing smallholder produce and supplying inputs. Smallholder produce is marketed through ADMARC; the private traders, which includes small dealers; and the Farmers Trading Company, a pri-

Table 11-1. *Basic Economic Indicators for Selected African and Asian Countries*

Country	Percent of GDP (1977)		Adult literacy (percent) (3)	Total area (thousands of hectares) (4)	Area under cultivation (thousands of hectares) (5)	Irrigated area (thousands of hectares) (6)	Population, 1981 (percent in agriculture) (7)	Population density (persons per square kilometer) (8)	r.o.g. of population, 1970-80 (9)	Rail-road density (year) (10)	Growth rate of agricultural production (percent) (11)	GNP per capita (1981 US\$) (rate of growth, 1960-84) (percent) (12)	Share of Agricultural GNP 1979 (percent) (13)
	Imports (1)	Exports (2)											
Kenya	34.0	32.1	50	58,265	2,275	46	17,148	29.43	3.4	8.86	4.2	420	34.0
Malawi	35.6	26.3	28	11,848	2,320	11	177.1 6,369	53.76	2.9	9.76	5.2	200	43.0
Nigeria	26.6	30.2	30	92,377	30,385	30	83.0 79,680	86.26	2.5	12.6	-0.4	870	22.0
Sudan	20.9	12.8	20	250,581	12,417	1,750	52.3 18,901	7.54	3.0		2.3	480	38.0
Tanzania	27.7	20.6	66	94,509	5,160	64	76.3 18,510	19.59	3.4	5.06	5.5	280	54.0
Bangladesh	14.5	5.8	26	14,400	9,089	1,620	80.4 25,701	378.48	2.6	6.31	1.8	140	55.0
India	6.1	5.3	36	328,759	164,690	39,350	62.4 697,974	212.31	2.1	56.65	2.1	260	43.8
Indonesia	19.9	21.7	62	190,435	18,047	5,418	58.1 150,520	79.04	2.3	8.50	3.8	530	24.2
Philippines	22.5	19.3	75	30,000	9,920	1,300	45.3 50,525	168.42	2.7	42.64	4.9	790	28.5
												2.8	

Sources: Column (1) and (2) World Bank (1980).
 Column (3) and (9) World Bank (1982).
 Column (6) and (13) FAO estimates (1979 data) from the World Bank (1983a).
 Column (4), (5), and (7) FAO (1981).
 Column (8) = [(7)/(A)] × 100.
 Column (10) Europa Publications Limited (1982).
 Column (11) and (12) World Bank (1983b).

vate organization. ADMARC also decides on the prices of inputs and outputs, which are announced before the cropping season. The policy of panseasonal and panterritorial pricing is followed. The Grain and Milling Company is another parastatal half-owned by ADMARC. It obtains maize from ADMARC or directly from estates, it imports wheat, and it sells maize meal and wheat flour to wholesalers licensed by ADMARC.

ADMARC purchases all marketable cotton and tobacco grown on customary land or public land. It has the sole right to wholesale small farmers' products and to import and export all grains. Private traders are allowed to operate under licenses from ADMARC and to assemble grain in certain areas.

Sudan

The main commodities produced in the Sudan are cotton, sorghum, groundnuts, wheat, and sesame. In the Sudan more than 98 percent of the total cotton area is administered by the public sector. The cotton trade was nationalized in 1971, reportedly to maintain reasonable price levels by protecting tenants from the devastating effects of foreign traders and to establish a strong government body able to survey cotton markets and explore new outlets for Sudanese cotton as well as to maintain traditional ones.

Wheat imports are controlled by the government; the government also procures wheat from producers in publicly managed irrigation projects. Private traders market mainly smallholder wheat produced in the north. Publicly procured wheat is distributed in urban areas through private millers and bakers at prices fixed by the government. All other crops, including exports, are generally marketed by private traders.

Nigeria

The main food crops grown in Nigeria are maize, rice, millet, and cow peas; palm oil, rubber, cocoa, groundnuts, cotton, and hides are its major exports. Important food crops are marketed through private trade and public marketing boards. The Grain Marketing Board has gradually been reducing its activities, and in 1983-84 the Board bought no grain at all at the producer price. In contrast, the Cotton Board buys 100 percent of the seed cotton crop, which is now consumed entirely by domestic manufacturers; the Cocoa and Palm Produce Board buys nearly 100 percent of the cocoa and palm kernel crops for export; and the Rubber Board buys about 60 percent of the rubber crop, also for export.

India

Wheat, rice, cotton, jute, oilseeds, pulses, and sugarcane are the main crops grown in India. Indian exports

and imports of foodgrains are conducted exclusively under public management. In domestic markets private trade in foodgrains is allowed; a short experiment in nationalizing the wholesale trade in foodgrains was attempted and abandoned in 1973-74. India has occasionally restricted the movement of foodgrains across states and sometimes district boundaries. Private trade operates with few restrictive and regulatory measures in domestic and external trades in nonfoodgrain agricultural products.

The principal institutional agency through which food procurement and distribution policies are implemented is the Food Corporation of India (FCI). It handles all purchases, storage, and distribution operations on behalf of the central government and some of the state governments as well. In addition some states have food and civil supplies corporations or cooperative marketing agencies, which make purchases and sales on their behalf. The FCI distributes foodgrains through ration shops and fair price shops run by state governments. Sometimes the FCI releases supplies through private trade to arrest a rising open market price. Procurement from farmers is handled through both direct purchase from farmers and indirect purchase from private agents.

Bangladesh

Rice and jute are the two main agricultural products of Bangladesh. The structure of agricultural markets, including public marketing arrangements in Bangladesh, is similar to that of India. The government holds a monopoly on external trade in foodgrains, and private trade operates freely in conjunction with public procurement and distribution of foodgrains. However, the government is now playing a larger role in stabilizing prices in the free market by selling foodgrains on the open market. The government supports the price of rice through a network of purchasing centers throughout the country and licensed private agents, who are also private grain traders. Foodgrains are distributed through a rationing system primarily in urban centers. The marketing of jute is also dominated by private trade, although a publicly operated corporation buys and sells jute in the domestic and export markets.

Indonesia

Foodgrains are marketed in Indonesia also through a mixture of private trade and public system, where public policies dominate the conduct of private trade. The Indonesian government marketing agency, BULOG, imports all foodgrains, procures foodgrains from farmers to support prices, and stores and distributes grains to consumers through open market sales. Private trade is encouraged in all tiers of domestic trade. For example, when BULOG purchases paddy in remote rural areas where it has no storage facilities, it transfers such purchased grain to private trade for transport and delivery to BULOG's main storage facili-

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ties. Similarly, milling of paddy by private millers and sale of grains at retail, wholesale, and primary markets are encouraged within a carefully delineated range of prices maintained by BULOG.

Philippines

Like the other Asian countries in this study, private trade plays a major role in food grain marketing in the Philippines—perhaps an even more dominant role than in the others. The National Food Authority is the public agency for market intervention. It has an exclusive monopoly in the export and import of foodgrains. This marketing body operates in the domestic market by procuring foodgrains from farmers at a support price and selling foodgrains to consumers at the open market to maintain a ceiling price. Foodgrains are often procured and sold through private traders working as agents of the public marketing agency.

The Analytical Framework

Market Structure and Prices

Market analyses include identification of appropriate prices and underlying factors that cause differences in prices across space and time and between producers and consumers. Marketing functions in agricultural commodities begin on farms and in villages. The village market is the primary conduit for delivering products from farmers to higher-level distributors, processors, and consumers. Wholesalers generally establish their shops around towns and large cities that are connected by infrastructural facilities. They buy products from intermediate traders and millers, as well as through agents who procure commodities from primary markets. Wholesalers in turn sell to retailers, who distribute products to consumers. Wholesalers also sell to exporters or export directly to foreign markets. Thus there are generally many market places and marketing channels in a country.

Consequently, there are many prices and marketing margins for an agricultural product in a country. Averages of prices or margins that provide the principal variables for price policy analysis must properly reflect the diversities in weights and quality of products. Thus, usually it is the weighted average rather than the arithmetic average price that should be used in price and marketing analyses. Failure to pick up appropriate average prices or average marketing margins may produce erroneous conclusions. For example, in an exercise to estimate demand and production elasticities of fertilizers from time series data for 1965–78 in Bangladesh, an econometric model generated an insignificant price coefficient with an improper sign when simple average prices of rice were included as an explanatory variable. When an average price weighted for different varieties and for different regions instead of a

simple average was used in the model, the proper sign for the price coefficient emerged and the coefficient was highly significant. (Ahmed 1980). Similarly, there are fifty to sixty wholesale markets for rice in Bangladesh with the margins between farms and wholesale markets ranging from 5 to 35 percent of wholesale prices. A border price based on a marketing margin related to one marketing channel (as is the current practice in that country) may thus be incorrect.

The nature of competition in various market places and marketing channels is also an important determinant of prices. Markets must be integrated for a valid aggregation of demand and supply schedules commonly used in price policy analysis. When trade links exist between markets, the differences in prices among them are generally explained by the marketing costs, which may consist of transport costs; processing costs, in the commodity at the farmgate differs in form from the commodity obtained by consumers; government taxes; the profit margin of market functionaries; and the transaction cost, including any risk premiums.

Differences in transport costs, particularly among countries, are explained by the differences in infrastructure and the distances of market points. The profit margin of traders could be larger than normal if the market is not competitive. If the market is competitive, the transport cost and normal profit will always fully account for price differences.

When various markets are not well integrated, and thus there are no trade links among markets, price spreads recorded among such market points can be much larger than the traditional estimates of marketing margins that represent only points where trade links are operative. Price spreads and marketing margin statistics can therefore be expected to exhibit different patterns in Asia than in Africa, primarily because of differences in infrastructure but also because of trade practices.

Seasonal differences in prices are considered to be a function of storage costs (costs of physical storage and interest costs on working capital) and the profits of traders in the storage business. Since storage involves uncertain future prices in relation to present prices, some element of risk is involved in trade. Traders may lose in one year and gain in another, but over the years an average number would earn a normal profit if the market were competitive. Similarly, in a cross-section of traders, some would lose while others would make a profit; the average would tend to show normal profit in a competitive market. The degree of competition is therefore a crucial factor, and the profit margin is an indicator of competitiveness.

Public marketing and administrative pricing greatly influence price developments. If public marketing is only partially effective because of inadequate budgets and if there are movement and trade restrictions on private marketing, differences in regional, seasonal, and producer-consumer prices could be much greater than what could be explained by marketing costs. Moreover, public trade

could be costlier than private trade, and, if the government passes this increased cost on to producers and consumers, the price spread could be unduly large. Public trade would tend to substitute for private trade if this action on pricing reduces regional and seasonal price differences to the extent that private trade finds this price difference too low to move and store products. If public trade is effectively supported by an unlimited budget to subsidize marketing costs, however, the government could largely reduce the gap between producer and consumer prices and between regional and seasonal prices, to the benefit of producers and consumers alike.¹

Prices and Margins Analyzed in This Report

Producer prices in the report generally relate to prices at a primary market or to farmgate prices. The producer price could be a market price or an administered price determined by government. Most producer prices used in this study are market prices except for a few East African countries in which public monopoly precludes a free market price. If a parallel market price was available and considered, however, it was reflected in the average. At the terminal markets there are retail prices for domestic consumers and export prices for foreign consumers (on an f.o.b. basis). Administered prices at the retail level (such as ration prices) are not considered in any estimate of price spreads.

Quality, particularly as it relates to processing, was examined before a price statistic was used in the analysis. For example, farm prices are often for paddy, but retail prices are for cleaned rice. In comparing retail and producer prices of rice in this example, the rice price equivalent of the paddy price was estimated by using a conversion factor and milling cost.

The estimates of the marketing margin and regional and seasonal price spreads, as presented in this study, represent central tendencies or averages for a country. Proportions of marketings in various regions or markets were used as weights in such a procedure. This procedure was not followed systematically in all cases, however, because often the necessary data were not available.

Spatial Spreads in Prices

Two categories of spatial prices are considered. Price spreads between the producer and consumer ends of a product market represent a category in which the market margin is equivalent to the spread in prices at the two ends. The other category of spatial spreads reflects the differences in prices at various regional markets at a particular time. This second category of price spreads may include differences that go beyond the explanations provided by the marketing margin. The marketing margin and

spatial price spreads are the same where the two price points are integrated by a functioning market or trade link. A spatial price spread could represent a price difference between two points having no functioning trade link between them. This is what is known as a nonintegrated market. Therefore the regional price spreads in some respects indicate the lack of market integration when compared with marketing margins.

The two types of spatial spreads in prices in foodgrain markets of the nine countries are presented in Table 11-2 and Figure 11-1. The statistics in the table as well as their graphic representation clearly show that farmers in Africa receive a smaller proportion of the price paid by final users of marketed foodgrains than do farmers in Asia. In general the average producer prices expressed as a percent of terminal market prices in the Asian countries vary from 75 to 90 percent; the comparable figures for Africa range from 30 to 60 percent. Farmers in Africa receive a share of the final value of a foodgrain product that is almost half of the share received by their Asian counterparts. The shares received by farmers also vary by commodity. For example, in African countries rice offers a relatively large share of final value to producers compared with other foodgrains. This is primarily because the production of rice in most African countries is concentrated in specific locations, which means that marketing of rice is not as costly as for foodgrains that are scattered geographically. But the differences in the shares received by producers among countries of a region are moderate although this difference is sharper among African than Asian countries. Farmers in Nigeria and the Sudan, the West and North African countries, appear to share about 55 to 60 percent of the price paid by final users of foodgrains, whereas farmers of Malawi, Kenya, and Tanzania, the East African countries, received only about 35 to 50 percent of the price paid by consumers.

The regional price differences within each country are again larger in Africa than in Asia (Table 11-2 and Figure 11-2). On average, regional prices of foodgrains in Africa differ from one another by a multiple of two to three (that is, the low price in one region could be only a third or a half the amount of the high price at another region).² One important aspect of price spreads is that the absolute size of the regional price spread is significantly larger than the marketing margin (the producer-consumer price spread) in Africa. This implies that many markets may not be linked with one another in African countries because of high transport costs resulting from poorer transport and communication infrastructure or government restrictions. In the Asian countries the regional price spreads are quite close to the marketing margins, which indicates that the markets scattered over various regions are probably well integrated with one another. Although it is quite unconventional to derive a conclusion on market integration from a set of data as is done here, the conventional practice of using correlation among prices as a measure of

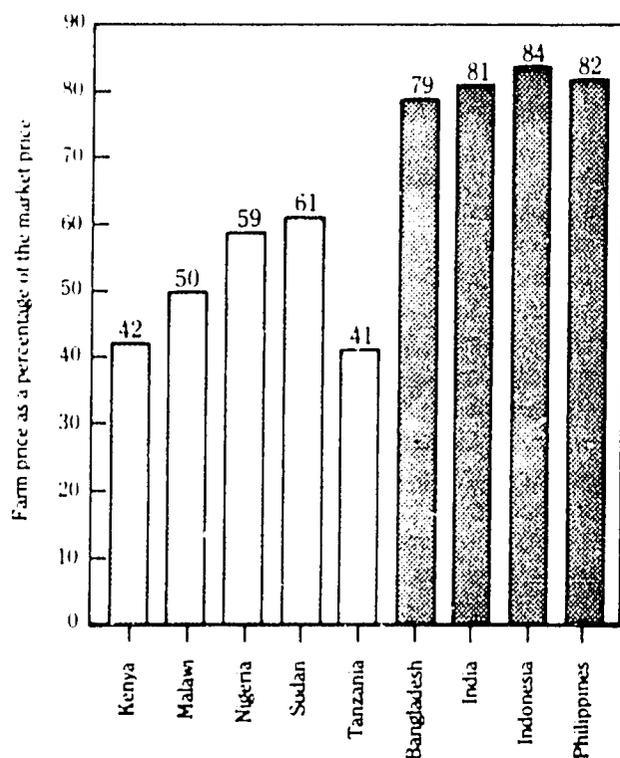
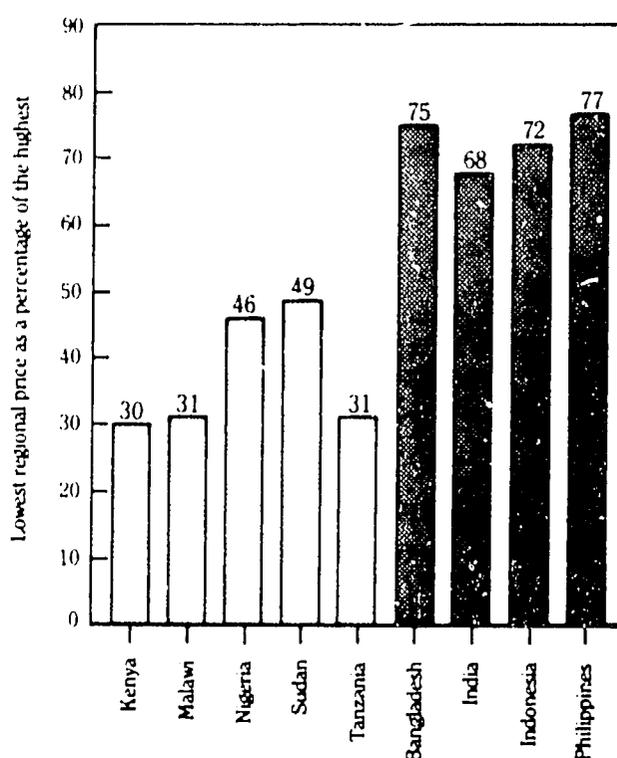
Table 11-2. Regional and Producer-Consumer Price Spreads in Selected African and Asian Countries, 1975-80

Country	Commodity	Weights (% by production)	Regional spread ^a (percent)	Weighted average	Producer- consumer price spread ^b (percent)	Weighted average
Kenya	Maize		30.0	30.0	42.0	42.0
Malawi	Maize	80	21.9	31.2	48.2	49.6
	Rice	21	68.2		55.1	
Nigeria	Maize	14	35.6	46.1	54.5	58.9
	Rice	6	72.9		57.0	
	Sorghum	80	45.9		59.8	
Sudan	Sorghum	92	48.2	48.5	61.2	61.2
	Wheat	81	52.1			
Tanzania	Maize	76	25.7	30.6	38.2	41.4
	Rice	10	61.3		56.6	
	Sorghum	14	35.5		48.1	
Bangladesh	Rice		75.0	75.0	79.0	79.0
India	Rice	54	69.8	68.0	82.0	81.0
	Wheat	38	65.9		79.5	
	Sorghum	8	63.5		80.0	
Indonesia	Rice		71.9	71.9	84.0	84.0
Philippines	Rice	70	82.7	77.3	87.0	82.4
	Maize	30	64.2		71.5	

a. Regional spread = (lowest price/highest price) × 100

b. Producer-consumer price spread = (producer price/terminal market price) × 100

Source: Constructed from secondary sources listed in the References.

Figure 11-1. Producer-Consumer Price Spreads in Selected African and Asian Countries**Figure 11-2. Regional Price Spreads in Selected African and Asian Countries**

integration is often unreliable. The issue of market integration and price transmission will be taken up later.

Seasonal Spreads in Prices

There are generally two types of variations in agricultural prices: the annual variations (price fluctuations between years) and the seasonal variations (within a year). The seasonal variations are examined here. The average spreads in seasonal prices (measured by the lowest price as a percentage of the highest price) for selected countries and commodities are shown in Table 11-3 and Figure 11-3. As with regional price differences and marketing margins, the spread in seasonal prices is also wider in the African countries than in the Asian. But the difference between the two groups is smaller for seasonal prices than for either the regional prices or the producer-consumer price margins. The causal factors for the spatial and seasonal price spreads are examined later.

Finding the Differences in Price Spreads and Their Implications for Policy

Although the previous analysis suffers from a general deficiency of data, some useful conclusions about the major causal factors and implications for policy may be drawn from a broad comparative analysis. As indicated in

Figure 11-3. Seasonal Price Spreads in Selected African and Asian Countries

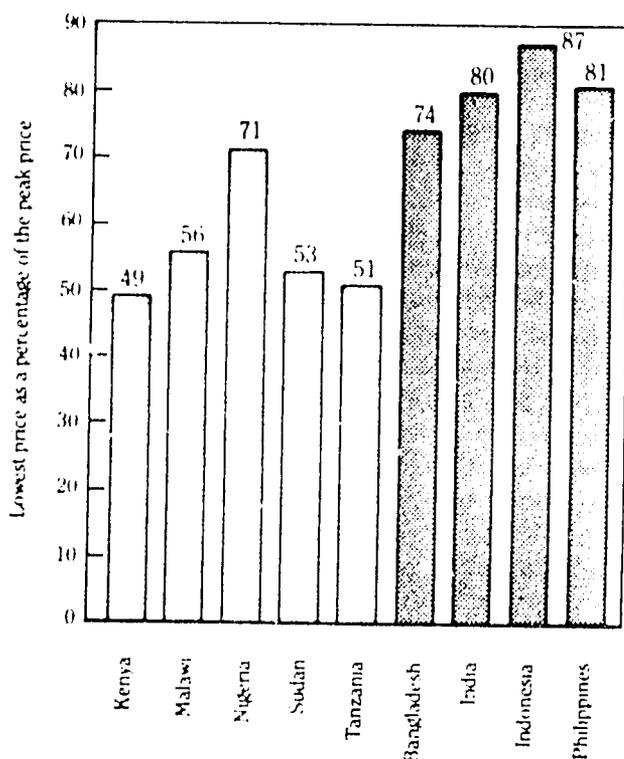


Table 11-3. Spreads in Seasonal Prices in Selected African and Asian Countries, 1975-80

Country	Commodity	Seasonal price spreads (lowest price as a percentage of the highest price)	Weighted average price for cereals
Kenya	Maize	49	49
Malawi	Maize	55	56
	Rice	60	
Nigeria	Maize	70	
	Rice	68	71
	Sorghum	72	
Sudan	Sorghum	51	53
	Wheat	71	
Tanzania	Maize	51	
	Rice	56	51
	Sorghum	50	
Bangladesh	Rice	74	74
India	Rice	81	80
	Wheat	78	
Indonesia	Rice	87	87
Philippines	Rice	82	81
	Corn	78	

Source: Constructed from secondary materials listed in the References.

the beginning, the differences in price spreads between two points in different countries that have an active trade link can be explained by the following marketing costs: transport costs for spatial spreads or storage costs (including interest on working capital) for seasonal spreads; taxes; other transaction costs, if any; any loss in weight during transport or storage; and profit (as a residual of prices after meeting costs).

Taxes and Profit Margins

Taxes on foodgrains vary from 3 to 10 percent of price in the African countries and from 2 to 5 percent in the Asian countries. Unlike export or cash crops, foodgrains in most countries are not taxed at the point of the external trader. Most of these taxes are internal local taxes. Loss in weight during storage or transport is probably not much different in the two regions. Similarly, differences in the profit margin realized by trading agencies are probably not substantially different between the countries of Africa and Asia. Information on the amount of profit in the marketing margin is scanty for the African countries, however. A few studies in Kenya, Malawi, and Nigeria indicate above-normal profits in maize trading only in certain segments of the marketing channels and in certain geographical regions that are primarily disadvantaged by unusually poor infrastructure. Even in these cases profits were not more than 20 to 30 percent of price, and it was not clear that such profits could be sustained in all years; a normal rate of profit in trade of agricultural products in South

Asia is generally believed to be about 15 to 20 percent of price.³ Therefore differences in trade profits explain only a small part of the differences in price spreads between the selected countries of Africa and Asia.⁴ Thus only transport (or storage) costs and other transaction costs involved in the marketing channel remain to explain most of the differences in spatial and seasonal prices between the African and Asian countries. These are both directly related to the level of infrastructural development and the nature of public intervention in marketing.

Marketing and Infrastructure

The more sparse populations of most African countries (15 to 30 persons per square kilometer) compared with that in most Asian countries (500 to 750 persons per square kilometer) and the more underdeveloped state of the general infrastructural facilities in Africa compared with that in Asia imply a higher marketing cost and general backwardness of agricultural marketing in Africa. Although every country may have special needs for transport and communication facilities, a good road network is generally required to move goods and people in most countries. The extent of road networks in the nine countries is shown in Table 11-4. The African countries have developed road networks to a density of 0.01 to 0.11 kilometers per square kilometer of land area compared with 0.30 to 0.45 kilometers of road per square kilometer of land area in the Asian. Moreover only about 10 percent of the roads in Africa are paved compared with about 35 percent in Asia. In terms of railways and river transports, Asian countries are also better off. The wider dispersion of

production centers and the longer distances to be covered in shipping agricultural products in Africa compared with Asia imply certain modes of transport and costs of marketing.

Generally speaking, goods in the primary markets in Africa are collected through head loads, donkeys, bicycles, and, to a lesser extent, animal-drawn carts, whereas head loads, animal carts, boats, rickshaws, buses, and pickup trucks are the modes of transport in the primary markets in Asia. Transport between regions and markets is provided primarily by trucks and railways in Africa; in Asia, motorized river vehicles, boats, various types of pickups, and even animal-drawn carts also perform such transshipment. The diverse modes of transport in Asia have made Asian marketing costs not only cheaper but also less import intensive. The import content of marketing costs in Kenya and Tanzania is about 50 percent compared with an estimated average import intensity of only 17 percent in Indonesia and Bangladesh.

Case studies as well as economic logic indicate that small-scale transport has considerable economic advantage over shorter distances, whereas large-scale transport is more economical over longer distances. To realize economies of scale from large-scale transport, however, an adequate volume of goods must use such a transport system. It has been argued that African countries generate a smaller volume of marketable surplus in foodgrains compared with Asian countries and that therefore the economies of scale that reduce marketing costs in transport cannot be exploited as effectively in Africa.

The statistics on marketable surplus of foodgrains in the selected African and Asian countries in Table 11-5 do not indicate that the marketable surplus is smaller in Africa than in Asia. In fact the data tend to show the opposite. The sharper dualism in African agriculture compared with Asian has its implications for marketing costs, however. In most African countries large mechanized farms (including estate farms and state farms) operate side by side with small peasant farms. The marketable surplus in the large farms is very high (about 70 to 75 percent), while peasant farms generate a small marketable surplus (about 10 to 20 percent). Large farming sectors generally have their own means of transport for delivering products directly to secondary or terminal markets, and thus they receive a higher market price than is possible for peasants, who hire transport services only occasionally. For the residual peasant sector the transport services become thinner than would be the case with a system in which the large-scale and peasant sectors combine to provide marketing services, as in Asia.

In Asia there is less dualism in production and marketing. This structural difference, as well as differences in some marketing policies between Asia and Africa have contributed to a larger degree of specialization in transport services in the former than in the latter. Thus in many African countries truck owners combine transport provi-

Table 11-4. *Road Network in Selected African and Asian Countries and the United States, 1976-78*

Country	Density of total road network ^a (kilometer per square kilometer of area)	Percentage of paved road
Botswana	0.02	9.5
Congo	0.02	6.5
Ethiopia	0.03	28.0
Kenya	0.09	9.7
Malawi	0.05	12.2
Mali	0.01	11.1
Nigeria	0.11	40.2
Senegal	0.07	23.0
Upper Volta	0.06	5.1
Zaire	0.06	1.5
Zambia	0.05	13.0
Bangladesh	0.35	32.0
India	0.41	38.8
Indonesia (Java)	0.41	37.2
United States	0.67	85.0

a. A road network includes primary highways, secondary roads, and dirt roads.

Source: International Road Federation (1980).

Table 11-5. The Marketable Surplus of Various Commodities in Selected African and Asian Countries, 1975-80

Country	Commodity	Marketable surplus as a percentage of production
Kenya	Rice	75
	Maize	38
Malawi	Rice	50
	Maize	15
	Groundnut	25
Tanzania	Maize	20
	Rice	25
Bangladesh	Rice	22
India	Rice	28
	Wheat	31
	Sorghum	12
Indonesia	Rice	56 (local variety) 70 (HYV)

Sources: Kenya, World Bank data; Malawi, World Bank data; Tanzania, Kriesel and others (1970). For Maize, Sigma One Corporation (1982), p. 48; Bangladesh, Ahmed (1980); India, India, Ministry of Agriculture, Directorate of Economics and Statistics (1983); Indonesia, Mears (1981), p. 96.

sion with grain wholesaling; they are known as "lorry traders." Separate specialization in transport services and grain trade is the norm in most Asian countries, however. These differences affect marketing costs.

Rural electrification is another factor that distinguishes the countries of the two regions. Rural electricity makes a great difference in the concentration and extent of grain milling facilities. If grain milling facilities are located in urban areas, transport costs become higher, and the flow of grain from rural to urban areas tends to be erratic, which causes rural and urban prices to be erratic as well. In Kenya, Nigeria, Tanzania, and most other African countries, the milling facilities are generally located in urban areas, except for home pounding for subsistence. Small-scale milling in rural areas of Bangladesh, India, Indonesia, and many other Asian countries, however, has been expanding quickly mainly because of rural electrification. For example, the number of small-scale rice mills in Indonesia increased from 5,000 in 1968 to 35,000 in 1973 (Mears 1981). Although the number of large mills around urban centers has decreased, by 1979 there was an overcapacity in rice milling, mainly because of the new mills in rural areas.

Infrastructural development, important as it is, is a long-term venture and needs to be sustained with a steady economic growth. Moreover, inadequate infrastructure is only a part of the explanation for larger marketing costs in Africa compared with Asia. Even though the absolute transport cost in marketing is about twice as high in Africa, the share of transport in the total marketing cost varies only from 35 to 50 percent. Therefore the different

marketing structures, as reflected in the operation of public marketing and private trade, must also play a significant role in explaining the difference in the marketing margin of foodgrains between the countries of Africa and Asia.

Public Intervention and Marketing Costs

As described earlier, public intervention in foodgrain marketing is widespread in all countries, but there is significant difference between Asia and Africa, particularly East Africa. In the selected Asian countries private trade is not only allowed to operate side by side with public trade but is also encouraged through various market development activities.⁵ Western Africa (Nigeria and the Sudan) closely resembles Asia in foodgrain marketing. Private trade is allowed to operate in both countries with minimal hindrance, although market development assistance to private trade is quite insignificant in these countries compared with that in their Asian counterparts. In contrast, East African countries are well known for their restrictive measures against private trade through public monopolies in foodgrains.

Public marketing affects the overall marketing margin both directly and indirectly. The direct effects arise from the relative inefficiency of government marketing compared with private trade and the inadequacy of public resources to support public marketing. The difference in efficiency between public and private marketing (high public marketing costs) may not be shifted directly to producers and consumers if the government has adequate resources to take the burden on itself, as in Indonesia. But this is not generally possible for most developing countries. Data on marketing costs in public parastatals are difficult to obtain; nevertheless, it is widely known that such costs are generally much higher than comparable costs in private trade. Labor cost is the largest component of marketing cost. A high proportion of the labor costs in parastatals is for formally educated employees. In private trade most workers and managers acquire on-the-job skills without much formal education. Thus a marketing study in Kenya indicates that most of the traders in the primary market are illiterate (Schmidt 1979). In the secondary markets about 16 percent are illiterate, and about 70 percent have studied up to the levels between the fourth and eighth grades. The salary scales for the same level of skill could be higher in private enterprise than in public organizations, but the effect of economizing on the use of formal skills would make private trade less expensive than public trade because of labor costs. Skilled labor is more scarce in Africa than in Asia. Moreover, wage rates are generally two to five times higher in Africa, even though average labor productivity is lower.

The indirect effect of public intervention on spatial price spreads, including producer-consumer price differences, is considered to be larger than the direct effect. These indi-

rect effects can be traced to a variety of reasons related to public operation in foodgrain marketing.

Numerous and diverse transaction costs are imposed on traders and farmers by public marketing and trade controls in the domestic channels. These costs generally originate from rules, regulations, and the practices of public agents. Public marketing often operates within an environment of licensing and prohibition of private trade. Getting a license or avoiding a prohibition involves considerable explicit and implicit costs. Although systematic studies of transaction costs are rare, some marketing studies in eastern Africa indicate that transaction costs necessary to overcome trade restrictions and get legal protection are as high as 15 to 20 percent of the marketing margin. Restrictions on marketing make it difficult for private trade to benefit from economies of scale. Instead of using trucks or railways for transport, traders use buses or small taxis to avoid movement restrictions. If public marketing is involved in any part of the marketing channel, the practice of payment by checks to farmers and traders and the arbitrary assessment of product quality generally result in considerable transaction costs for farmers and traders.

Empirical evidence of the relative efficiencies of public and private trade are rare, although public trade is widely believed to be costlier. Prudencio compared the free trade of Benin with the marketing monopoly of the Nigerian marketing board for palm oil and found that the cost differences in the two systems are such that farmers receive 11 percent less for palm oil in Nigeria than in Benin. A study in Kenya also indicates that storage and interregional marketing costs are 15 to 25 percent higher in public than in private trade (Schmidt 1979).

A large amount of diverse and scattered information was used to assess the contribution of various causal factors (including the effect of public trade) in the overall difference in marketing costs between the nine African and Asian countries. Because of the nature of the data, the results, shown in Table 11-6, can be considered only indic-

ative, although the indications are believed to be close to reality.

The figures in the table clearly point out that differences in transport and associated costs constitute the largest cause of the different marketing margins between Africa and Asia. Nevertheless the share of residual transaction costs associated with the indirect consequences of public trade and the small but significant tax component in the different marketing margin together represent a proportion almost as large as transport.

Policy Implications

The policy implications of the decomposition analysis of the marketing margin are quite clear. Improving infrastructural facilities could greatly increase incentives for both producers and consumers. A second major area needing improvement is public policies in agricultural marketing. Although most improvements in infrastructure take a long time, reforms in public marketing policies can produce results in a relatively short time in Africa.

A strategy of infrastructural development that gives priority to areas in which actual or potential growth in production is large is an obvious policy choice. To some extent a sharply dualistic agricultural sector has exerted a natural influence in some African countries, so that infrastructural development has been concentrated primarily in areas in which production is concentrated. Thus Sudanese agriculture is dominated by several irrigation projects (including Gezira) and mechanized rainfed agriculture in areas in which most of the Sudan's infrastructural investment has occurred. This strategy has resulted in a low marketing cost for agricultural produce grown in these areas. The marketing cost of cotton in Gezira is only about 12 percent of the cotton price at Port Sudan.⁶ Similarly, Malawi has been pursuing an agricultural production strategy focused on large-scale farming in the south, where infrastructural investment has received priority. Although this has resulted in a relatively low marketing margin for farms, the negative effect on the small-farm peasants primarily located in the north has been countered by public marketing. Giving priority to infrastructural investment on the basis of large- or small-scale farming is not desirable on the grounds of distributive justice. But for the sake of efficiency in allocating infrastructural resources, small-scale or peasant farmers should be organized or restructured to generate enough business to meet the critical minimum required for efficient use of infrastructural facilities.

In the second policy area, the question of public marketing appears to be enmeshed with some of the consequences of infrastructural backwardness and agricultural dualism. There is little doubt that public intervention has contributed to the large marketing margin and price spreads (implying disincentives to both producers and consumers) in Africa. But this intervention seems to have

Table 11-6. *Shares of Causal Factors in Different Foodgrain Marketing Margins between African and Asian Countries*

Factors	Absolute margin (points)			Shares of the factors in the difference (percent)
	Africa	Asia	Difference	
Taxes	3.9	0.6	3.3	9.4
Transport and associated costs	27.5	13.8	13.7	39.1
Profit	12.6	4.0	8.6	24.5
Transaction costs (residuals)	11.0	1.6	9.4	27.0
Total	55	20	35	100.0

Source: Estimated on the basis of information from Kenya and Malawi in Africa and Bangladesh and Indonesia in Asia.

been motivated partly by conditions arising from occasional (as well as locational) market failures. Several factors are responsible for this. First, underdeveloped infrastructure tends to encourage farmers to be independent of the market. Second, large- and small-farm dualism is so sharp in Africa that large farms tend to vertically integrate marketing and production. This leaves a very thin market for the small, peasant sectors who are not large enough for efficient marketing. The thin market is generally an unstable market. Development of an efficient exchange system, economies of scale, and service provision become very difficult and uncertain in thin markets. Ironically, public intervention in marketing designed to rectify the problems associated with market failures further accelerates the process of thinning, which makes the problem complex. Although a wholesale dismantling of public parastatals in Africa is perhaps an irresponsible prescription, few will disagree that public marketing in these countries needs to be substantively reduced and improved. It thus seems logical that Africa needs to follow a path of gradual transition to private trading through selected public intervention in marketing, continuous efforts to develop markets, and a heavy commitment to properly formulated infrastructural development. The central element of this approach is that private trade should be allowed to work freely. Market development policies involving improved legal and physical facilities and flow of information should be another component of this transition. Direct public marketing may be limited to areas in which backward infrastructure makes agricultural income and production low and uncertain and in which it is necessary to maintain secure stocks of foodgrains.

Summary

The economic environment in which farmers operate in developing market economies exerts a significant influence on the efficiency of resource utilization and on the pace of growth in production. Domestic marketing structures, including private as well as public trading institutions, are the principal elements of this environment of incentives. The difference between prices paid by final consumers and those received by primary producers and the intertemporal and spatial gaps in prices reflect the structure and efficiency of the market. The effectiveness of a macroeconomic policy instrument in providing incentives to producers or consumers depends quite significantly on the operation of the domestic market.

This chapter has examined the producer and consumer, spatial, and seasonal price spreads in nine African and Asian countries. These price spreads were decomposed to identify the causal factors underlying the differences between the regions. The decomposition analysis of marketing margins and spatial price spreads help to identify

strategic policy variables and measure the extent to which farm prices can be raised and consumer prices lowered by changes in market institutions. The countries studied—Bangladesh, India, Indonesia, Kenya, Malawi, Nigeria, the Philippines, the Sudan and Tanzania—represent a wide spectrum of public intervention in foodgrain marketing, budgetary resources, infrastructural facilities, and the growth in agricultural production.

The analysis of price spreads showed that farmers in Africa receive a smaller proportion of the price paid by final consumers of foodgrains than do the farmers in Asia. The average producer price, expressed as a percentage of the terminal market price, ranges from 75 to 90 percent in the Asian countries; the comparable figure for the African countries is 35 to 60 percent. These estimates vary for different food commodities. Within Africa, farmers of Nigeria and the Sudan (West and North Africa) appear to share about 55 to 60 percent of the price paid by final users of foodgrains, whereas farmers of Malawi, Kenya, and Tanzania (East Africa) generally receive only about 35 to 50 percent of the final price.

Regional price differences are again larger in Africa than in Asia. Regional price differences in Asian countries seldom exceed 70 percent. The absolute size of the regional price spreads is significantly larger than the marketing margin (the producer-consumer price spreads) in Africa, which implies that many markets may be poorly integrated. In Asia the regional price spreads are quite close to estimates of the marketing margins, which indicates a more closely integrated market.

The spread in seasonal prices is also wider in Africa than in Asia. However, these price differences are smaller than either the regional or producer-consumer price margins between countries in the two regions.

To deduce sensible policy conclusions from the analysis of price spreads, the underlying causes for different price spreads have to be properly identified. The decomposition analysis of marketing margins showed that transport and associated marketing costs explain 39 percent of the difference in marketing margins between African and Asian countries. A different incidence of taxes explains only 9.4 percent of the difference, and profits explain only about 24.5 percent. The rest of the difference in marketing margin (27 percent) is explained by other transaction costs associated with public marketing. The implications for the development of infrastructure and changes in the domestic marketing structure in African countries are clear from this decomposition analysis.

African countries face a complicated dilemma in their infrastructural and marketing policies. The dualism between large farms and peasant farms in most African countries has generated a marketing problem. Large farms tend to vertically integrate production and marketing. This leaves the small-farm sector to depend on an extremely thin market, which is not congenial for the growth of specialized marketing services. A thin market is

also a very unstable market. Government intervention becomes a natural choice to rectify the problem. Ironically, expensive government intervention accelerates the "thinning" even further. Infrastructural backwardness, however, tends to encourage a strategy of concentrated production on large or estate farms, so that infrastructure could be provided selectively and affordably. This dilemma really indicates the need for a strategy of infrastructural development that considers the form of farming organization, regional potentials for increased production, and public policies to induce private trade in marketing. Public intervention in marketing in Africa may not be eliminated altogether, but the need for gradual changes through selective intervention and market development is clear enough.

Finally, it may not be wrong to say that nobody really knows what prices African farmers actually receive for their products. In Asia one feels reasonably confident that estimates of farm prices are close to actual prices; in Africa, however, one is not quite sure. Therefore further studies on prices generally received by African farmers are an important area of research that is relevant for price policies. Such research should be followed by studies on market structure, particularly the interface between private and public marketing. Transaction costs imposed on private trade by public policies need to be quantified if the price spreads in African markets are to be understood thoroughly. The knowledge of extensive parallel markets in many African countries is almost nil. Similarly, the economic compulsions behind the propensity of market intervention in Africa are poorly understood. Future research should shed light on some of these issues of agricultural marketing in Africa.

Notes

1. But such benefits are not without cost. The issues of government financing of these costs and the indirect costs of such an intervention are not examined here.

2. These statistics do indicate that the so-called panterritorial pricing policies, particularly in Tanzania, were often not effective.

3. This margin of profit relates to the profit rate per year. The profit rate per business trip or consignment is, however, much smaller, only about 4 to 8 percent. Turnover in trade is thus important. Because the market is thin, turnover is smaller in Africa than in Asia.

4. The comparative inefficiency of public marketing is not reflected in these estimates. Relative inefficiency in public marketing is thus attributed to high price spreads in Africa by deductive reasoning.

5. These include development of market places, dissemination of price and production information, introduction of standard grades and weights, maintenance of law and order in transport channels and markets, provision of credit to traders, initiation of agricultural processing and specific storage facilities, and provision of electricity to rural markets.

6. Although the marketing cost is small in Gazania, the farmers receive only a small part of the final price because of other deductions for production costs contributed by the project authority. Marketing costs outside the project areas and in distant areas in the south and west of Sudan are very high.

Bibliography

General

- Berg, Elliot. 1979. "Reforming Grains Marketing Systems in West Africa." Center for Research on Economic Development, University of Michigan, Ann Arbor. Processed.
- Christensen, Cheryl, Edward B. Hogan, Bede N. Okigbo, G. Edward Schuh, Edward J. Clay, and John W. Thomas. 1982. *The Developmental Effectiveness of Food Aid in Africa*. New York: Agricultural Development Council.
- Europa Publications Limited. 1982. *The Europa Year Book 1982: A World Survey*. Vol. 2. London.
- Food and Agriculture Organization of the United Nations. Various years. *FAO Production Yearbook*, various issues, Rome.
- Heyer, Judith, Pepe Roberts, and Gavin Williams, eds. 1981. *Rural Development in Tropical Africa*. New York: St. Martin's Press.
- International Road Federation. 1980. *World Road Statistics*. Geneva.
- Krueger, Anne O. 1974. "The Political Economics of the Rent Seeking Society." *American Economic Review* 64 (June): 291-303.
- Lele, Uma. 1981. "Rural Africa: Modernization, Equity, and Long-Term Development." *Science* 211 (February): 547-53.
- Lewis, Stephen R. 1973. "Agricultural Taxation and Intersectoral Resource Transfers." *Food Research Institute Studies in Agricultural Economics, Trade, and Development* 12: 93-114.
- Mears, Leon A. 1981. *The New Rice Economy of Indonesia*. Yogyakarta, Indonesia: Gadjah Mada University Press.
- Raju, V. T., and M. von Oppen. 1982. *Marketing Efficiency for Selected Crops in Semi-Arid Tropical India*. Economics Program Progress Report 32. Andhra Pradesh, India: International Crops Research Institute for Semi-Arid Tropics.
- Scandizzo, Pasquale L. 1984. "The Consequences of Price Stabilization Policies: Theoretical Problems and Empirical Measurements." FAO, Rome. Processed.
- Scandizzo, Pasquale L., and Colin Bruce. 1980. *Methodologies for Measuring Agricultural Price Intervention Effects*. World Bank Staff Working Paper 394. Washington, D.C.
- Siamwalla, Ammar. 1978. "Farmers and Middlemen: Aspects of Agricultural Marketing in Thailand." *Economic Bulletin for Asia and the Pacific* 29(1): 55-75.
- Timmer, C. Peter. 1974. "A Model of Rice Marketing Margins in Indonesia." *Food Research Institute Studies* 13: 145-68.
- Timmer, C. Peter, Walter P. Falcon, and Scott R. Pearson. 1983. *Food Policy Analysis*. Baltimore, Md.: Johns Hopkins University Press.
- United States, Department of Agriculture. 1981. *Food Problems and Prospects in Sub-Saharan Africa: The Decade of the 1980s*. Economic Research Service, Foreign Agricultural Research Report 166. Washington, D.C.
- Wolke, Manfred, compiler. 1978. *Statistical Information on Indonesian Agriculture*. Eschborn: German Agency for Technical Cooperation Ltd.
- World Bank. 1980. *World Tables*. Baltimore, Md.: Johns Hopkins University Press.

- . 1982. *World Development Report 1982*. New York: Oxford University Press.
- . 1983a. *Accelerated Development in Sub-Saharan Africa: An Agenda for Action*. Washington, D.C.
- . 1983b. *World Development Report 1983*. New York: Oxford University Press.

Bangladesh

- Ahmed, Raisuddin. 1979. *Foodgrain Supply, Distribution and Consumption Policies Within a Dual Pricing Mechanism: Case of Bangladesh*. IFPRI Research Report 8. Washington, D.C.
- . 1980. *Price Policies under Complex Natural and Socio-economic Constraints: The Case of Bangladesh*. Research Report 27. Washington, D.C.: IFPRI.
- Bangladesh, Ministry of Planning. 1980. *Yearbook of Agricultural Statistics, 1979/80*. a. Bureau of Statistics.
- Farruk, M. O. 1970. *The Structure and Performance of Rice Marketing in East Pakistan*. Occasional Paper. Ithaca, N.Y.: Cornell University.
- Islam, Shamsul M. 1975. "Agricultural Marketing in Bangladesh." Report submitted to the Economic and Social Commission for Asia and the Pacific. Bangkok.

India

- Harriss, Barbara. 1979. *Paddy and Rice Marketing in Northern Tamil Nadu*. Madras: Sangam Publishers.
- India, Ministry of Agriculture, Directorate of Economics and Statistics. 1983. *Indian Agriculture in Brief*. Delhi: Controller of Publications.
- . Various years. *Agricultural Situation in India*. Delhi: The Controller of Publications.
- Kahlon, A. S., and D. S. Tyagi. 1983. *Agricultural Price Policy in India*. New Delhi: Allied Publishers Private Limited.
- Khusro, A. M. 1973. *Buffer Stocks and Storage of Foodgrains in India*. New Delhi: Tata McGrawHill Publishing Co., Ltd.
- Lele, Uma J. 1971. *Food Grain Marketing in India: Private Performance and Public Policy*. Ithaca: Cornell University Press.
- Mellor, John W. 1978. "Food Price Policy and Income Distribution in Low Income Countries." *Economic Development and Cultural Change* 27 (October).
- Ranade, C. G., K. H. Rao, and D. C. Sah. 1982. *Groundnut Marketing: A Study of Cooperative and Private Trade Channels*. Ahmedabad: Indian Institute of Management.

Indonesia

- Mears, Leon A. 1981. *The New Rice Economy of Indonesia*. Yogyakarta: Gadjah Mada University.
- United States, Agency for International Development. 1983. "Project Paper: Secondary Food Crops Development." Jakarta. Processed.

Kenya

- Kenya. 1981. Sessional Paper 4 of 1981 on National Food Policy. Nairobi.
- Marketing Development Bureau. 1977. *Price Policy Recommendations for the Agricultural Price Review*, Vol 1. Nairobi: Ministry of Agriculture.
- Mukui, J. T. 1979. *Price and Marketing Controls in Kenya*. Occasional Paper 32. Nairobi: Institute of Development Studies.
- Schluter, Michael. 1983. "Constraints to Kenya's Food and Beverage Exports, with Special Reference to Markets among the Oil Exporters." IFPRI, Washington, D.C. Processed.
- Schmidt, Guenter. 1979. *Maize and Beans in Kenya: The Interaction and Effectiveness of the Informal and Formal Marketing Systems*. Occasional Paper 31. Nairobi: Institute for Development Studies, University of Nairobi.
- Witucki, Lawrence A. 1976. *Agricultural Development in Kenya since 1967*. Foreign Agricultural Economic Report 123. Washington, D.C.: Economic Research Service, USDA.

Malawi

- Food and Agriculture Organization of the United Nations. 1981. "Findings of the Agriculture Programme Development and Project Formulation Mission." Malawi. Rome.
- . 1982. "Mission Report on Diversification of Smallholder Agriculture." Several parts. Rome.
- Food and Agriculture Organization of the United Nations/African Bank Development Bank/Investment Centre. 1982. "Report of the Malawi Rural Development Projects Identification Mission." Rome.
- Malawi Government. 1978. Country Review Paper 41 in the World Conference on Agrarian Reform and Rural Development, Food and Agriculture Organization of the United Nations, Rome.
- . 1980. "Crop Marketing and Price Projections." *Marketing Economist*, Planning Division, Lilongwe, Malawi. Rome.
- . 1983. *Malawi-Monthly Statistical Bulletin*. Zomba: National Statistical Office.
- United Nations Development Programme/Food and Agriculture Organization of the United Nations. 1979. "Review of the Movement and Storage of the Grain Harvest: A Mission Report." Rome.

Nigeria

- Balcer, Jean-Claude. 1982. "Constraints to the Adoption of New Farm Technology in Northern Nigeria." Paper presented at a seminar on the same topic sponsored by the Department of Agriculture and Rural Development and Western African Projects, World Bank, Washington, D.C.
- Bienen, Henry. 1983. *Oil and Policy Choices in Nigeria*. World Bank Staff Working Paper 592. Washington, D.C.
- Federal Office of Statistics. 1981. *Annual Abstract of Statistics*. Lagos.

- . 1982. *Retail Prices of Selected Items, July 1981–June 1982*. Lagos.
- Hays, H. M. 1975. *The Marketing and Storage of Food Grains in Northern Nigeria*. Zaria: Institute for Agricultural Research, Ahmedu Bello University.
- Knipscheer, H. C. 1979. *Prices (1973–79) of Major Food Crops in South West Nigeria*. Agricultural Economics Information Bulletin 4. Ibadan: IITA.
- . 1981. *Prices (1979–80) of Major Food Crops in South West Nigeria*. Agricultural Economics Information Bulletin 4. Ibadan: IITA.
- Oni, S. A., and A. E. Ikpi. 1981. *Rice Production, Marketing, and Policy in Nigeria*. Occasional Paper 3. West African Rice Development Association, Monrovia. Processed.
- Robertson, James W. 1983. "An Analysis of Agricultural Trade and Subsidy Policies in Nigeria." World Bank, Washington, D.C.

Philippines

- Bouis, Howarth E. 1983. "Seasonal Rice Price Variation in the Philippines: Measuring the Effects of Government Intervention." *Food Research Institute Studies* 19: 81–92.
- Hiwatig, Mario H. 1983. "A Study on Marketing Costs and Margins of Major Food Commodities in the Philippines." Paper submitted to the FAO Regional Office for Asia and the Far East. Bangkok.
- Langham, Max R., and Ralph H. Retzlaff. 1982. *Agricultural Sector Analysis in Asia*. New York: Agricultural Development Council.
- Philippines, Bureau of Agricultural Economics. 1981. *Prices Received and Paid by Farmers, 1981*. Quezon City.
- Unnevehr, Laurian J. 1983. *The Effect and Cost of Philippine Government Intervention in Rice Markets*. Working Paper 9. Washington, D.C.: IFPRI.

Sudan

- Acharya, Shankar N. 1979. *Incentives for Resource Allocation: A Case Study of Sudan*. World Bank Staff Working Paper 367. Washington, D.C.
- Ahmad, Abu-Shaikha. 1982. *Towards the Alleviation of Rural Poverty in the Sudan*. In-Depth Studies Series 1. Rome: FAO.
- Ahmed, A. Hummeida, and M. Mirgari AlSalam. 1983. "Price Policy and Production of Sorghum (Dura) in Sudan." Paper prepared for the Agricultural Price Policy Workshop, Ministry of Agriculture, Khartoum. Processed.
- El Bashir, Abdel Razig, and Babiker Idris. 1983. "Impact of Marketing and Pricing Policies on Production of Ground-

- nuts." Paper prepared for the Agricultural Price Policy Workshop, Ministry of Agriculture, Khartoum. Processed.
- Ibrahim, Sam. 1983. "Sudan Cotton Pricing Policy." Paper prepared for the Agricultural Price Policy Workshop, Ministry of Agriculture, Khartoum. Processed.
- Sattar, Abdus. 1983. "Pricing of Wheat in Sudan." Paper prepared for the Agricultural Price Policy Workshop, Ministry of Agriculture, Khartoum. Processed.
- Sattar, Abdus, and Tageldin T. Elmagboul. 1983. "Comparative Advantages of Agricultural Products: A Sensitivity Analysis of the Comparative Advantage of Agricultural Products Produced under Different Farming Systems in Sudan." A report on the UNDP/IBRD Planning Assistance and Training Project, Ministry of Agriculture, Khartoum. Processed.
- Winch, Fred E. 1983. "A Framework for Formulating Food Grain Price Policy with Reference to Sorghum and Wheat in Sudan." Paper prepared for the Agricultural Price Policy Workshop, Ministry of Agriculture, Khartoum. Processed.
- World Bank. 1982. "Sudan: Investing for Economic Stabilization and Structural Change." Washington, D.C. Processed.
- . 1982. "Sudan: Pricing Policies and Structural Balances." Vol. 3. "Agriculture in Sudan." Washington, D.C. Processed.
- Youngblood, Curtis E. 1983. "Marketing Systems in the Southern Region of the Sudan." Report prepared for the USAID Mission to Sudan. Sigma One Corporation, Raleigh, N.C. Processed.
- Zaki, E. A. A. 1983. "Agricultural Pricing Policies of the Sudan." Paper prepared for the Agricultural Price Policy Workshop, Ministry of Agriculture, Khartoum. Processed.

Tanzania

- Berry, L., O. Mascarenhas, and S. Steward. 1982. "Eastern African Country Profiles: The United Republic of Tanzania." International Development Program, Clark University, Worcester, Mass. Processed.
- Coulson, Andrew. 1982. *Tanzania: A Political Economy*. New York: Oxford University Press.
- Kriesel, Herbert C., Charles K. Laurent, Carl Halpern, and Henry E. Larzelere. 1970. "Agricultural Marketing in Tanzania: Background Research and Policy Proposals." Marketing Development Bureau. 1977. "Review of Crop Buying Arrangements 1976/77—Main Report." Ministry of Agriculture, Dar es Salaam.
- Sigma One Corporation. 1982. *The Consumption Effects of Agricultural Policies in Tanzania: Final Report*. Raleigh, N.C.
- Tanzania, Ministry of Agriculture. 1980. *Price Policy Recommendations for the 1981–82 Agricultural Price Review*. Dar es Salaam.
- . 1983. *The Agricultural Policy of Tanzania*. Dar es Salaam.