Marketing, Markets, and Price Policy in China's Grain Economy

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Abstract: The grain sector plays a crucial role in China's agriculture. The government has intervened heavily in grain marketing, markets, and price formation. The objectives of market and price intervention are to secure farmer incomes and ensure consumer food supply at low prices. The economic reform started in 1979 has provided farmers with more freedom to take advantage of free markets, but consumers are still heavily subsidized in food consumption. Grain marketing will be further liberalized, but the government will be in a dilemma, given its unwillingness to raise consumer prices of food grains in the short run.

The government has actively intervened in grain marketing, markets, and price formation in China since the early 1950s. The state procurement of grains, which began in 1953, set the stage for government monopoly of food grains by state or parastatal agencies. This policy was based on the well-accepted perception in China's development strategy that food grains should be treated as "the first class of vital commodities," so that they must be controlled directly by the state in order to secure farmer income and ensure consumer food security as well as stability of the society. The practical mechanisms implementing this policy were that grain producers must sell their grain surpluses to the state-run food agency at state-set prices according to preset procurement quotas, and that the state-run food agency resells food grains through its local fair-price food shops to urban consumers at low prices (usually lower than prices farmers receive), using rationing. Before 1979, grain sales to free markets by producers were prohibited, so that the state actually monopolized all grain markets and marketing activities, including transport, storage, and processing of grains. Grain price formation took place in the planning office of the Ministry of Commerce rather than in the real marketplace.

With the relaxation of controls over the private sector and the reopening of free markets in both rural and urban areas in 1979, farmers have been allowed to enter the free market with their surplus grains, but only after the procurement quota being delivered to the state has been fulfilled. The quota delivery scheme, however, was not changed until the beginning of the 1985 crop year, when the central government introduced a new arrangement of contracting for the purchase of grains in place of the quota procurement system. In principle, the contract purchase system gives grain producers more freedom to decide the volume of their surplus grains being sold to the state. The mechanisms implementing this new system are that, at the beginning of a crop year, the state food agency, in its local offices, reaches a contract with the grain producer about the volume and varieties of grain delivery at the state-set prices during the coming harvest time, and that, by the time the harvest comes, the local state food agency (located in each township even in some villages) is responsible for collecting and paying farmers. The state food agency is also ready to purchase overcontract delivery at a higher price, which is also set by the state but linked to the corresponding free market price to some extent. Farmer decisions on how much of the overcontract surpluses are sold to the state will be influenced mainly by the price offered by the state in relation to the free market price and some benefits that may be associated with overcontract deliveries to the state. Under these dual arrangements, therefore, the state food agency forms the major market for China's food grains, and the rural and urban free market constitute the residual.

Both theoretically and practically, producers are more willing to deliver their grain surplus to free markets where the government exerts little direct influence on prices and where prices are in general 30-50 percent higher than average contract prices. This raises a question about whether the previous quota procurement system differs from the current contract purchase system in terms of the bargaining position of both sides. It does, for farmers saw the share of surplus grains delivered to the state decline, on average, from over 90 percent a few years ago to around 50-60 percent in 1985-86 (Figure 1), which implies that farmers have more freedom to decide for themselves the volume of grains delivered to

the state, although the contract purchase system still has, in some sense, the nature of a compulsory arrangement (Wen, 1987).

Grain trade in free markets has taken place primarily in the traditional rural and urban food and other local produce markets, such as local town fairs and urban street-side agricultural product markets, with some exceptions, such as Changsha and Wuxi, two major grain trading centres. The primary function of these traditional markets is to provide an opportunity to exchange locally produced agricultural products and handicrafts, and a substantial amount of the activity is barter. Grain traders in these markets include local grain producers; part-time farmers who may bring grains from surplus to deficit areas for resale or those who must buy grain for their own and their family's consumption; or those "urban" consumers who formally work in cities, but without access to food rationing because their legal residence is still in rural areas (for various reasons). Participants in these markets also include the private "specialized" marketing agents from both urban and rural areas who have emerged in recent years. Moreover, some local government-administered food agencies or companies have also been participating in interregional or interprovincial grain trade, because the regional allocation of grains directly by the central government has been recently reduced and the local governments in grain-deficit regions have to buy grains from other regions in order to avoid grain shortage.

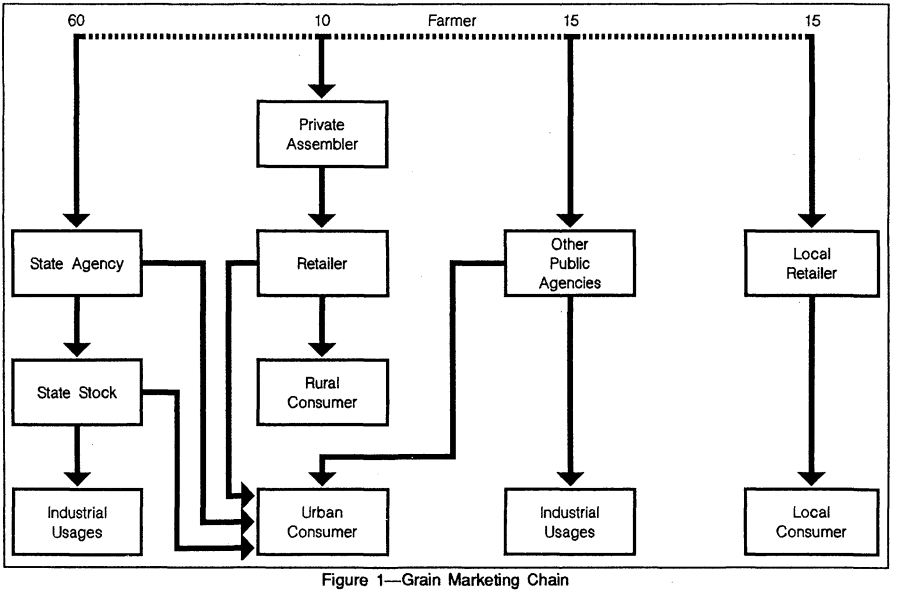

Figure 1—Grain Marketing Chain

Figure 1 illustrates the marketing chain for grains currently operating in China. The numbers above the arrow lines represent the percentage of total grain marketed by farmers, based on a very rough estimation of the situation observed in Changsha and Wuxi, the grain trading centres. In this example, farmers sold 60 percent of their marketed grain to state food agencies (according to contracts reached between the farmer and the state), 40 percent to local free markets (of which 10 percent was sold to private assemblers, both local and visiting), 15 percent to other public food agencies (such as neighbouring provincial government-administered food companies), and 15 percent directly to local consumers (both rural and urban). The numbers have not been broken down further since detailed data are not available. Figure 1 is constructed to identify the main actors in China's grain marketing rather than the quantitative results.

With respect to the price formation of grains in free markets, one can argue that the general principles of supply and demand determinants apply. However, in addition to the

normal determinants of supply, grain supply in these free markets is also influenced by the cash obligations of the smallholders and market accessibility to nonfarm traders and part-time farmers who may bring grains from surplus to deficit areas, as well as the effect of the central government's grain allocations on local governments.

Data on free market prices of grains in total and by major commodity between January 1985 and July 1987 are presented in Table 1. These markets appear to be fairly competitive in the sense that prices for all commodities followed similar movements, which implies that substitution effects between commodities are at work. However, as Table 1 shows, the price movements for all grain categories in the free market did not conform to the regular seasonal pattern that economists expect. Between 1985 and 1987, grain prices for all categories kept rising, even during the harvest time. In one aspect, however, this observation is explainable given the fact that annual grain output between 1985 and 1987 was lower than in 1984 or before, while the demand for grains either as food or feed increased drastically because of increased population and expanded livestock production.

Table 1—Free Market Price of Grain

		Grain*	Rice†	Wheat	Maize	Soyabeans
		Yuan/100 kg				
1985	Jan.	46.3	61.0	46.8	32.7	74.8
	Mar.	47.1	61.6	46.8	33.5	76.9
	May	47.5	61.4	46.2	33.8	79.6
	July	47.6	61.6	45.1	34.3	79.8
	Sept.	48.4	62.6	46.0	34.8	82.0
	Nov.	49.4	63.5	47.8	36.0	82.7
	Av.	48.0	62.2	46.6	34.4	79.6
1986	Jan.	51.1	66.1	49.5	37.5	85.4
	Mar.	53.3	68.5	50.8	39.6	89.2
	May	54.9	69.6	50.9	41.2	92.0
	July	55.5	70.0	50.5	42.6	93.5
	Sept.	56.8	72.0	51.5	43.4	96.1
	Nov.	59.4	76.3	54.0	45.5	100.0
	Av.	55.8	71.5	51.7	42.2	93.4
1987	Jan.	61.9	81.5	56.6	47.4	102.0
	Mar.	62.5	83.0	57.0	47.5	103.0
	May	62.0	83.0	56.0	47.0	104.0
	July	62.3	83.6	56.3	46.3	104.0
	Av.	62.2	82.8	56.5	47.1	103.3

*Average price for all grain traded.
†Milled rice, quality not classified, but all quality more or less evenly distributed.
Source: Personal survey data on several major grain trading centres such as Wuxi and Changsha.

Transport, storage, and processing of grain in China used to be handled solely by government food agencies. This has gradually changed to some extent since 1979. Although no precise data are available to estimate the share of the private sector, the importance of private operations has been increasing, particularly in grain storage.

Grain grading in China is not well regulated. A relatively formal grading system of grains has been established only in the formal market; i.e., practised by the public food agency in buying and selling grains. Grain grading in the free market is minimal and is usually done visually. Visual inspection on the basis of a sample has been used to determine quality price differentials in local grain markets.

Moreover, the national free market is disarticulated and regionally isolated, given the constraints of the backward communication system and other undeveloped marketing infrastructure. Interregional bulk flows of grain are handled mainly by the state food agency under the guidelines of the Commerce Ministry and by local government food companies. Few private traders are engaged in interregional grain transactions. However, buyers and sellers in the local free markets are equally well informed. Prices are determined largely by the forces of supply and demand, actual or anticipated. Although the flow of information in these markets is intricate, both buyers and sellers appear to have perfect knowledge of market conditions.

On the government side, active policies have been designed and implemented to intervene in price formation of grains so as to achieve the objective of grain (food) self-sufficiency. In summarizing the price policy implemented before 1978-79, Barker *et al.* (1982) end with the following observations: "...China maintained low food grain prices and rationed basic necessities so as to ensure a more equitable distribution of supply. Although the government subsidized grain prices to consumers, producer prices remained well below international levels and low relative to prices of noncrops."

However, this policy, to keep food grain prices low (Lardy, 1984) and to ensure that a food grain supply at low prices was at the expense of other crops, was expensive and led to severe distortions of resource allocation (Wen, 1986). In late 1978, the Chinese government, after a series of heated debates on the consequences of previous policies, adopted new policies that have given agriculture high priority, including price incentives to farmers and reduced quota deliveries to the state. In 1979, the first year of the new policy implementation, quota prices for grains were raised 20 percent and overquota prices were set at 50 percent above that. By 1985, the state purchasing price for grain as a category was, on average, 67 percent higher than in 1978. Prices rose, however, not only for grain crops, but for nongrain crops as well. Table 2 shows that, between 1978 and 1985, prices for major grain crops relative to nongrain crops remained almost unchanged. Inputs such as chemical fertilizer have been rationed according to acreage. However, rationed fertilizer at state-subsidized prices constitutes a small proportion (perhaps only 10-30 percent) of total fertilizer used by farmers. Most chemical fertilizers as well as other important inputs are purchased on the parallel market at about double the rationed prices. Hence, the grain-fertilizer price ratio does not say much about farmer responsiveness, even if it was favourable.

Table 2–Relative Price Ratios between Commodities*

Commodity	1952	1957	1978	1985
Grain† to:				
Fertilizer‡	0.37	0.51	1.14	1.13
Other chemicals‡	0.06	0.08	0.19	0.11
Wheat§ to:				
Rice	1.63	1.55	1.20	1.24
Maize	1.84	1.59	1.44	1.47
Soyabeans	1.11	1.02	0.67	0.66
Groundnuts	0.85	0.67	0.54	0.44
Rapeseed	1.09	0.67	0.50	0.46
Cured tobacco	0.20	0.19	0.20	0.28

*The same unit is used for commodity comparisons, such as kilograms or tons. The price ratios are calculated using grain and wheat as numerators and the other commodities as denominators.

†The price used is for grain as a category; i.e., the weighted average of all grain procurement prices.

‡The prices used here are the average state-set retail prices. Fertilizer and chemical prices are based on standard nutrient weights; e.g., ammonium sulfate with 20 percent nitrogen.

§The ratios are computed on the same basis, using the relationship between salt and the individual commodity concerned; e.g., 100 kg of wheat in 1952 were valued at 70 kg of salt, while the same unit of rice could exchange 43 kg of salt, so the wheat/rice price ratio in 1952 is 1.63.

Source: SSB (1986, pp. 637-640).

On the consumption side, absolute prices of major foodstuffs have remained almost unchanged since the middle 1950s. The government has, for both political and economic reasons, committed itself to ensuring a food supply to urban consumers at low prices through rationing and by subsidy from the state budget. Rationed retail prices of food grains have not changed visibly, while the state budget allocations for food price subsidies increased from 1,900 million yuan in 1960 to over 20,000 million yuan in 1985 (Carter, 1987).

In conclusion, the Chinese government is not likely to make radical changes in food grain price policy. However, the government will certainly use more market mechanisms to provide producers and consumers with economic signals. Recent developments show that, in several provinces, rationed grain prices to urban consumers increased by 50-100 percent on average, which moved the state retail price of food grains close to the free market price (*People's Daily*,

Table 3–Grain Price and Price Relations between Markets

Year	Actual Procured Price (1)	Free Market Price (2)	Ration Retail Price (3)	Price Relation (1)/(2)	Price Relation (1)/(3)	Price Relation (2)/(3)
	– – – Yuan/100 kg – – –			– – – Percent – – –		
1980	31.56	55.40	28.34	57	111	195
1981	33.02	54.60	28.10	61	118	194
1982	33.92	56.00	28.34	61	120	198
1983	35.44	53.80	28.88	66	123	187
1984	36.24	48.60	29.04	75	125	169
1985	37.28	47.90	28.18	78	132	170

Sources: Table 1 for free market prices and SSB (1986, pp. 639-640).

July 11, 1988, p. 2). Table 3 indicates that both the procurement prices and rationed retail prices of grains by the state moved towards free market prices between 1980 and 1985. This may facilitate the price reform of food grains in the future. In the short run, however, grain prices for both producers and consumers are unlikely to reflect the relative scarcity of the commodity, although the private sector may play an increasing role in price formation of grains. In addition, neither the state budget being allocated to agriculture nor grain imports are likely to exceed the current levels. This poses a dilemma in terms of concern about producer incentives and consumer welfare.

Note

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DISCUSSION OPENING—*Catherine Halbrendt* (University of Delaware)

The purpose of Wen's paper was to describe China's food (grain) policy and price reform. He did an excellent job in describing the past and current intervention mechanisms of the Chinese government in the food production-marketing-consumption chain. This paper is essential reading for those who want a short but comprehensive overview of China's current price reform and its impact on the grain sector.

The objectives of the Maoist and post-Mao food policies are basically the same, but the means to achieve the objectives are quite different. The objectives, according to Wen, are to: "secure farmer incomes and ensure consumer food security as well as stability of the society." With regard to the means of achieving the objectives, the Maoist and post-Maoist régimes pose a stark contrast. The Maoist régime did not allow for selling on the free market, and the procurement prices paid to farmers and consumer prices did not change much during the period. In contrast, the post-Maoist régime allows surplus quantities to be sold on the free market after the individual household has fulfilled its contractual agreement and government prices are responsive to market forces. The post-Maoist strategy, in essence, concentrates on motivating higher productivity through household efforts and price signals. As stated by Wen, with the current means, the percent of grain contracted to the

government has been declining from 90 percent in the late 1970s to the current 60 percent. Wen did not examine how the government can acquire enough grains to meet its obligations to consumers at subsidized prices. The government appears to have the following alternatives to offset the shortages: (1) buy on the international market, (2) increase procurement prices to ensure an adequate amount, or (3) buy on the free market. The first and third alternatives are less than desirable for they are subject to price uncertainties and fluctuations caused by world and domestic supply and demand factors. The most desirable alternative to the government appears to be alternative (2), which is to increase the procurement prices to ensure sufficient amount of grain grown and contracted to the government. We can actually observe this strategy occurring, as indicated by the author, as the gap between the government and market prices is narrowing. The question that then needs to be raised is, if the government intervenes in the grain market, so that most of the sales are going back to government agencies (state and provincial), then what role does the free market play in the future?

The second issue that I would like to raise pertains to the differential impacts of the post-Maoist policies at a more disaggregate level, the provincial level in the case of China. As I understand it, the procurement prices are uniform across provinces. If this is true, they are neither efficient nor equitable, since production costs vary among provinces. Moreover, the market prices among provinces exhibit huge differences, due to the limited interprovincial trade due to emphasis on self-sufficiency and inadequate and inefficient marketing infrastructure. Perhaps Wen can elaborate on whether the government is considering (1) adjusting procurement prices across provinces and (2) embracing the theory of comparative advantage to promote more regional specialization and trade.

A third issue is the continuous upward trend of real grain prices since 1985. The reason given by the author was that demand growth has been outpacing supply growth. Will this upward trend be sustained uniformly across all grains? Currently, close to 80 percent of the Chinese diet is food grain based. Further improvement in income levels is unlikely to lead to further increases in per capita consumption of food grains but rather to increases in feed grain consumption via livestock consumption. I would like Wen to comment on whether he sees different demand growth between direct and indirect grain consumption.

Finally, the paper ends by speculating that the government will not intervene as much in the future. Currently, the transmission of world grain prices to domestic prices is zero. Does the author imply that the government will allow for some price transmission to occur?

GENERAL DISCUSSION—*Gopal Naik, Rapporteur* (Indian Institute of Management)

A suggestion was made that, given the provincial imbalances in supply and demand situations, the question of grain imports by the provinces should be examined.

Wen replied that the government provides funds to grain-deficit areas to import grain from outside the country. In his reply to the discussion opener, Wen said that world food price transmission in China will not be significant in the future.

Participants in the discussion included K.-E. Wädekin.