

Chapter V

MARKET STRUCTURE AND THE ANALYSIS OF MARKET PERFORMANCE

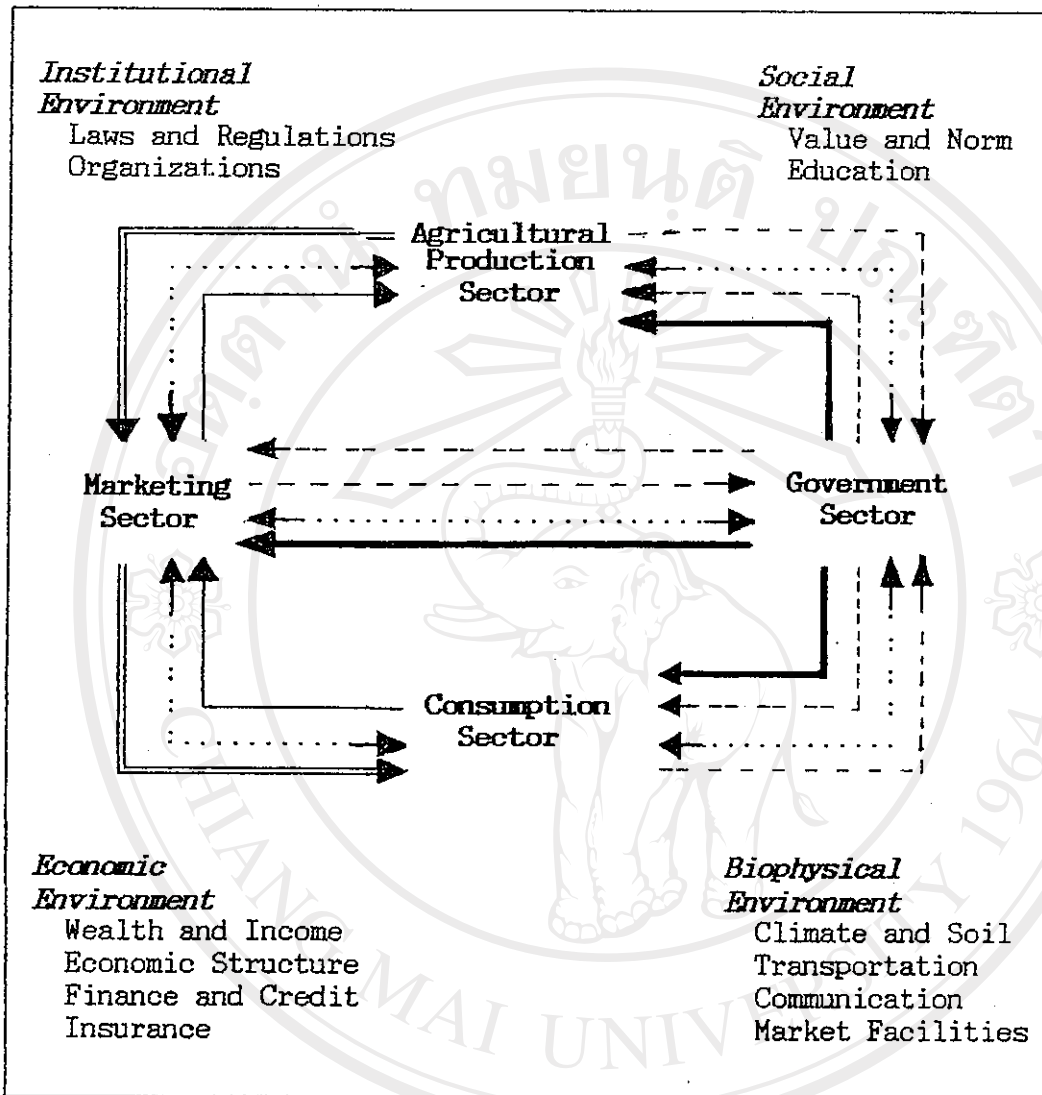
The marketing system can be viewed from both its structure and its performance. It is widely agreed that structure determines the system function (conduct) and system performance, therefore the analysis of the structure is important to help reveal the system and improve the system. As market conduct is difficult to observe and measure, market performance analysis which is relatively easier is needed to measure and overview market function.

5.1 Market Structure

Market structure is determined by market components and their interrelations, number and size distribution of marketing firms (agencies), economic and institutional barriers to market entry and exit. This part will analyze the main determinants of the structure of agricultural market in Hunan province.

5.1.1 Market Components and Their Interrelationship

The marketing system is based on social, institutional, economic and biophysical environments. The marketing system is integrated by four distinguish components (*Figure 5*) —the government,



Legend:

- | | | | |
|--------|------------------|------------|------------------|
| —————▶ | Commodity Flow | —————▶ | Instruction Flow |
| —————▶ | Cash Flow | - - - - -▶ | Tax Flow |
|▶ | Information Flow | - - - - -▶ | Subsidy Flow |

Figure 5 Diagram Shows Marketing System Components and Their Interrelations in Hunan Province at Present

the producers, the consumers and the market traders. The government used to be the predominant figure in the agricultural market which set policies for and gave instructions to all the other 3 sectors in the market. The government was heavily involved in the buying and selling activities of agroproducts through its pervasive representative marketing agencies such as the *Rural Co-operatives* (Co-ops) and the *Grain Marketing Agency* (GMA). Farmers in Hunan, were restricted from full participation in marketing activities. Private agribusiness allowed only in some small scale activities such as vegetable and poultry product retailing. Even through the private sector is growing fast in recent years, it still has a long way to go to be comparable to official marketing agencies in the agricultural market. Consumers used to have little choices of which shop to go to and what to buy as the rationing system restricted them to their assigned particular agency-like shops, but this situation is changing as the free market sector is growing quickly and every thing is becoming available there. Now consumers buy most of their vegetables, fruits, aquatic products, poultry products from free market places while they still buy most grain and cooking oil from government marketing agencies.

The marketing of agricultural products used to be *Product Monopoly*, because the government divided and assigned the marketing job to a group of its representative agencies, therefore, no competition exist among those agencies or companies. The private sector was partially allowed to enter the market only a few years ago, its over all market share is still too small to result in competition. *Figure 6* shows the flow of agricultural products.

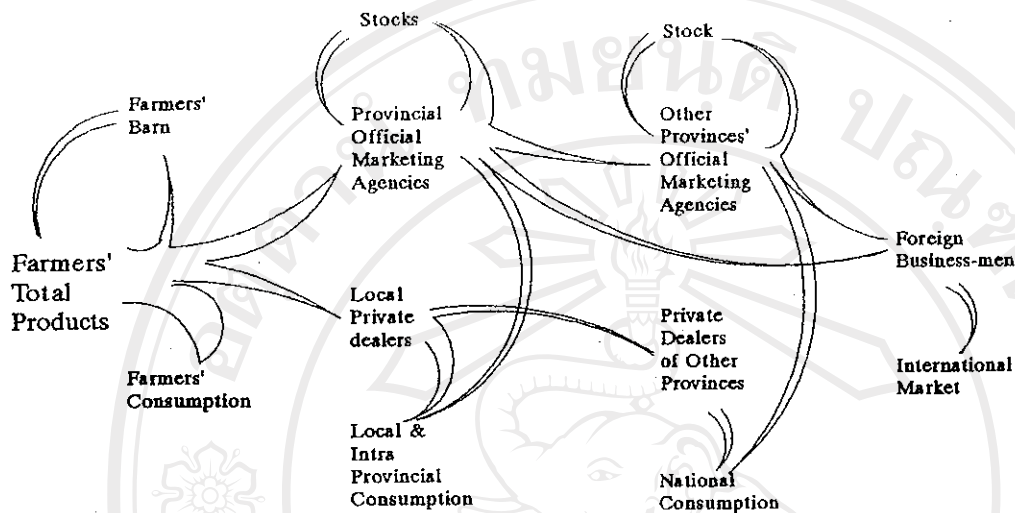


Figure 6 Market Flow of Agricultural Products in Hunan Province

In terms of the number of marketing firms or persons, the private sector and public sectors are the largest part in agricultural marketing activity (Table 11), those people are active in every where in the province, most people are not professional but part time or seasonal farmers, and those people mostly run small scale business. They merchandise mainly perishable products such as vegetables, fruits and poultry products, but they are excluded from the marketing of major agricultural products such as cotton, tobacco and grain. This sector has been viewed by the government as complementary part to the existing state-run and collective marketing sectors.

Table 11 Rural Commercial Agencies and Agents

Year	Items	State-Owned	Collective*	Private
1987	Agencies	6,816	40,400	-
1990		5,800	37,747	-
1987	Agents	62,800	193,000	814,900
1990		53,439	180,327	915,000

Source: Hunan Commerce Administration Bureau.

Note: * Collective means run locally under the permission and support of local government.

In terms of marketing capacity and volume of agricultural products, the *Co-ops* is the market giant concerning its privilege of monopoly right on the marketing of major agricultural products such as cotton, edible oil, industrial crops and etc (*Table 12*), it is a large network covers the whole province with good information, transportation, storage and processing facilities. But in terms of marketing of vegetable, fruits and aquatic products, the private sector occupies a large market share.

Inter-provincial trades of agricultural products are mainly conducted by government marketing agencies such as the Rural Co-ops, GMA and *Food Marketing Agency* (FMA) which dominate the meat market. International trades are conducted by state import and export (I/E) firms which have been granted the monopoly right.

Table 12 Market Shares of Private and Non-private Sectors
Unit: million yuan

Items	Sectors	Private Marketing Sectors		Official Marketing Sectors		Average Proportion	
		(1)		(2)		(3)=(1)/(2)	
	Years	1988	1990	1988	1990	1988	1990
Grain		3560	3030	17670	16310	0.201	0.185
Meat,Poul.Eggs		28790	35550	39580	39810	0.727	0.893
Fish,Aquatic		5540	8110	4660	5980	1.189	1.356
Vegetables		8980	12450	8120	9960	1.106	1.250
Nuts & Fruits		5940	6770	5350	6590	1.110	1.027
Cattle,Animal		9050	9410	-	-	-	-

Source: Hunan Statistics Year-book (1988-1990).

In terms of the marketing of agricultural inputs, the official *Production Input Marketing Agency* (PIA) and the *Agricultural Machinery Marketing Agency* (MMA) dominated the market even though they share some business with others such as the *Agricultural Extension Agency* (AEA) and some private businessmen.

5.1.2 Government Marketing Representatives

Government agricultural marketing agencies include the Rural Co-ops, the Grain Marketing Agency, the Food Marketing Agency, the Production Input Marketing agency, the Agricultural Machinery Marketing Agency and the Agricultural Extension Agency. These marketing bodies were established and operated according to government instructions.

5.1.2.1 The Rural Co-ops

The rural Co-ops was established soon after the founding of the PRC in early 1950s. Up to 1952 there were 79 county-level cooperatives and 1,122 town level cooperatives with 2.44 million members and 29,800 employees (*Table 13*). The market share of the agricultural market of the Co-ops was 26.6% in 1957 for the whole province. In 1958, the Co-ops was changed to government marketing agency, properties and employees were put under local government control as part of the implementation of the centrally planned economic policy. Since then it compliance to the policy of: "Buying what farmers produced, buying all farmers produced, and buying what farmers sell". The Co-ops was therefore developed into a large monopoly network, at present, it has established at least one branch shop with 10 to 100 employees in every rural township.

During 1961-1965 period, the government released market control a little bit to allow the existence of private agricultural business. In 1970 the Co-ops was merged into the state-run commercial network. In 1987 the Co-ops was separated out and became again a kind of collective marketing organization, there were 40,400 rural cooperatives (including its procurement branches) with 193,900 employees in the province, but it was no longer real co-operatives as it no longer had farmers in its membership.

Table 13 Development of Rural Co-ops in Hunan Province

	Year			
	1952	1957	1978	1987
agencies	1,201	13,400	17,750	40,400
employees	29,800	74,200	126,700	193,900
membership	2,440,000	8,400,000	-	-

Source: The Handbook of Hunan

5.1.2.2 The Grain Marketing Agency

Grain marketing was, and is very important to both food security of the people and the stability of the society, so it draws high attention from the government. The monopoly agency — the GMA was established when the PRC was found in 1949, since 1953 the GMA keeps buying both compulsory and ordinary grains as well as edible oil from the farmers at artificially low official prices and sell out (mainly to urban residents) at even lower prices according to a rationing system with huge amount of government financial subsidy. For example, in 1990, the official procurement price of rice was 38 yuan/100 kg, the retailing price of polished rice to urban residents was 30 yuan/100 kg (to obtain 100 kg polished rice need 140-160 kg raw rice) which accounted for only 47-55% of the procurement cost. The annual marketing volume of the GMA exceeds 5 million ton (*Table 14*) in the whole province. It also take all the responsibility of grain and oil processing, transportation, storage

Table 14 Grain Marketing in Hunan

Unit: million ton

item	Year					
	1980	1985	1987	1988	1989	1990
Local Buying	2.447	2.807	4.374 [@]	2.390	2.461	2.469 [#]
	0.855	0.321	-	1.425	1.732	1.849 [*]
Local Selling	2.361	2.546	3.115	2.707	2.381	2.550
	0.624	0.551	-	0.873	0.637	0.482
Buying From Outside	-	-	1.024	-	0.185	0.450
	-	-	-	-	0.583	0.238
Sold to outside	-	-	0.667	-	0.288	0.448
	-	-	-	-	0.178	0.316

Source: Hunan Grain and Edible Oil Marketing Agency.

Note: # Marketed amount at official low price
 * Marketed amount at floating market price
 @ Total marketed volume

and inter-provincial grain trades. In 1987, the GMA system employed 101,700 employees, had 997 buying and selling stations, 3,708 retailing shops, 11,472 stocking barns with full capacity of 8.15 million ton in the province. Recently, the GMA monopoly power has been weakened by the economic liberalization which allowed the private sector to enter the grain marketing business. The province is on the track to break the monopoly starting from 1993 and to gear it to free marketing.

5.1.2.3 The Food Marketing Agency

The Food Marketing Agency (FMA) used to be a marketing monopoly of animal, poultry and aquatic products. Before 1979, farmers were compulsorily required to raise hogs and sell them to the FMA at

official prices, there is no other alternative market for meat, poultry products, fish etc. The FMA system has branches in every township, and cooling storage and processing facilities in every county. After a series of market liberalization steps in the past decade, now there is no more any compulsory quotation posed on farmers in the production of those products, the FMA lost its monopoly position in the early 1980s when more and more private businessmen entered the market. Even though it lost a large part of its rural market to the private business, it still hold the predominant position in the urban market and inter-regional trade businesses with the help of its good facilities, extensive networks and government subsidy.

5.1.2.4 The Agricultural Production Input Marketing Agency

The *PIA* which was very similar to the rural Co-ops, was established to take care of the monopoly marketing of agro-inputs such as chemical fertilizers and insecticides. Those products sold to the farmers involved a lot of government subsidy to provide the farmers with low input costs as a kind of production incentive, but this also caused side effect that the situation of the insufficient production being further deteriorated by the low price which stimulated strong demand from the farmers. Agricultural inputs especially fertilizers are sold to farmers according to a strict rationing system, the amount a farmer allowed to buy was related to his farm size, amount of farm product sold to the government, and the government production program (*Table 15*).

Table 15 Quotation Marketing of Fertilizers

Items	Amount of Product Sold to the Government at Official Price	Amount of Chemical Fertilizer the Farmer Can Buy
Rice	100 kg	30 kg
Soybean	100 kg	30 kg
Corn	100 kg	20 kg
Wheat	100 kg	20 kg
Cotton	100 kg	70 kg
Tobacco	100 kg	60 kg

Source: Yang, 1992 and survey.

The PIA is still a kind of government marketing agency which has been granted monopoly marketing power and holds the leading position in the market with good marketing facilities and distribution network. Even through the current market liberalization is extending to every aspects, the government still keep the PIA to be the official distribution channel of important agro-inputs as it believes that under short-supply situation monopoly is the best way to guarantee farmers fair prices. So the PIA is expected to maintain its position within the near future.

5.1.2.5 The Agricultural Machinery Marketing Agency

The MMA used to be a government marketing monopoly in charge of the distribution of agricultural machinery such as tractors, irrigation and harvesting machines, and fuel. The MMA business reach the

peak during the 1970s when the province was on a fever of trying to quickly modernize the agricultural production sector. At present, the private and other marketing firms are allowed to enter the agromachinery business, but fuel is still the MMA monopoly business as it is still in short supply and under tight government control. The government also assigns the MMA to take care of licensing, managing and maintaining of rural tractors, trucks and other machineries.

5.1.2.6 The Agricultural Extension Agency

The AEA was originally founded for the diffusion of agricultural technology to farmers. The government used to finance all its expenditures for extension works, but recently it has been required to seek other financial sources for itself, as the government is no longer able to take care of the AEA's spending for the ever extending activities, and it believed a package with both technology and essential inputs would be more acceptable for the farmers in terms of agricultural extension. Therefore, in order to help the AEA to survive in market competition, the government granted it the privilege to share some business in the marketing of agricultural products and inputs with rural Co-ops and PIA, therefore, it can earn some profit from the monopolized semi-official marketing activities which helps finance its extension work. With the market liberalization and competition intensified, the AEA marketing business is expected to gradually lose its marketing privilege.

5.1.3 Public and Private Marketing

Public and private marketing bodies include various non-governmental trading companies, private business firms and seasonal agro-businessmen.

5.1.3.1 The Trading Companies

With the implementation of the "open door" policy, various import & export (or trading) companies now play active and increasingly important roles in the marketing of agricultural products to the international market. Export volumes and prices of some products has significant impact on farm prices of many agroproducts in the province, such as animal products, cash crops, medicine herbs and local food stuff. The trading companies also have a lot of marketing contract-related production bases in various regions. It is worth to mention that the trading companies used to be run by the government, but since the 1980s they have become independent.

5.1.3.2 The Private Middlemen and Companies

In 1952, there were 259,900 people engaged in private retailing and food services. This number increased to 814,900 and 915,000 in 1987 and 1990 respectively. This sector has been expanding rapidly. At present most retailers are small scale, seasonal, non-professional businessmen. After the market liberalization in 1985, more

and more people have penetrated into the wholesale and inter-regional trade businesses of fruits, animal products and vegetables etc.. The private sector is growing very fast and has become an increasingly important market component (*Table 12*) in agricultural product marketing.

5.1.3.3 Rural Fairs and Public Marketing Activities

The rural free market has been re-opened in late 1980s. Farmers are now active in agricultural marketing, they sell their products directly at local markets or in the nearby regions. As a result, periodical rural fairs are quite popular. Permanent food, vegetable assembly market or botches are flourishing every where. Agricultural production activities are noticeably diversified and commercialized by farmers according to their market interpretations in recent years.

5.1.4 Economic and Institutional Barriers to Market Entry and Exit

To open a marketing firm and to conduct trading business, a person needs an operation license and initial fund. Many people were unable to enter marketing business, or have to quit later for various reasons such as having inadequate market knowledge, poor management skill, or lacking of liquid maintenance capital, But the most common barriers that keep the intended people away from entering the marketing sector are either economic and/or institutional factors.

5.1.4.1 Registration and Operation Rules

The market entry for the private professional marketing business is possible now, but it needs the government's permission. To open a shop or a company one needs to apply to the commerce bureau for an operation license, and to pay operation tax regularly in terms of percentage of gross income or predetermined fixed amount for each month. For the large group of part time traders, their activity were not allowed until a few years ago. They do not need any license and they used to be ignored by tax-collectors, but now they are officially required to pay government tax according to the capacity and the kind of business dealing. Tax rates vary for various products.

It is noticeable that the private sector has never been granted rights to enter market of whole-sale of major agroproducts and agro-inputs which will challenge the government monopoly marketing sector.

The state-run and regional collective marketing agencies and companies were set up by the government, so they were automatically granted operation licenses with marketing privileges. They used to be obliged to submit all their annual profits to the provincial or local government finance department, and received subsidies from there to balance their operation losses in case of running official businesses. Now their financial relation with the government is shifted to tax payer/collector relation. Besides their government granted privilege businesses of marketing important agricultural inputs/outputs, they run other agribusinesses the same as the private sector.

5.1.4.2 Tax Exemption, Tax Preference and Subsidization

In order to encourage people to enter agricultural marketing business, the government grants all market "new enterers" an income tax-holiday incentive for their first 3 operation years. For the collectively run marketing companies and those run by government departments and institutions they were also granted other tax cut privilege to raise their ability to compete and survive. It is found that the tax ratio for the private sector is much higher than the collectively run sector. Some local government agencies also collected various fees from local businessmen to construct local projects. Inter-regional trade of some products were also required to pay local government taxes some times. Government subsidies to its marketing representatives in the marketing of major agricultural products significantly depressed their retailing prices. Therefore, it was almost impossible for the private sector to enter the market of these products before the government liberalized the market in 1985.

5.1.4.3 Employment and Residence Rules — Divided Citizenship

There are two kinds of citizenship for the people, one is classified as farmers and the other is classified as non-farmers. Farmers used to be prohibited from working in cities. It is still difficult for them to open any kind of business in cities. People who are in the non-farmer category have the privilege of being employed by government enterprises, they can easily get license to become a private

businessman. Farmers can not enter government enterprises which mostly operated in cities, but they are granted land to farm even though they do not own it. Therefore, there are more constraints for the farmers to enter the marketing sector, especially in marketing centers like big cities.

5.1.4.4 People's Wealth, Market Entry Cost

At current income and saving level, to start an agricultural marketing business, even a minimum amount of capital needed to facilitate the operation, means quite much to most people. To apply for an operation license, and to find a place to set up a shop, used to cost more than 1 year's income of an ordinary farm household or the wage of an average worker. Therefore many people can not open their businesses simply because lack of capital, only the initially well-off people can become professional agricultural businessmen. As the income level of most people improves significantly (*Figure 7*) and the commerce credit become available, economic factor will no longer be an important barrier to market entry.

5.2 Market Performance

Market performance which is the direct result of market conduct is not so difficult to observe and measure. The most frequently used measurement parameters are marketing efficiency, market stability, economic growth and social equity (fairness).

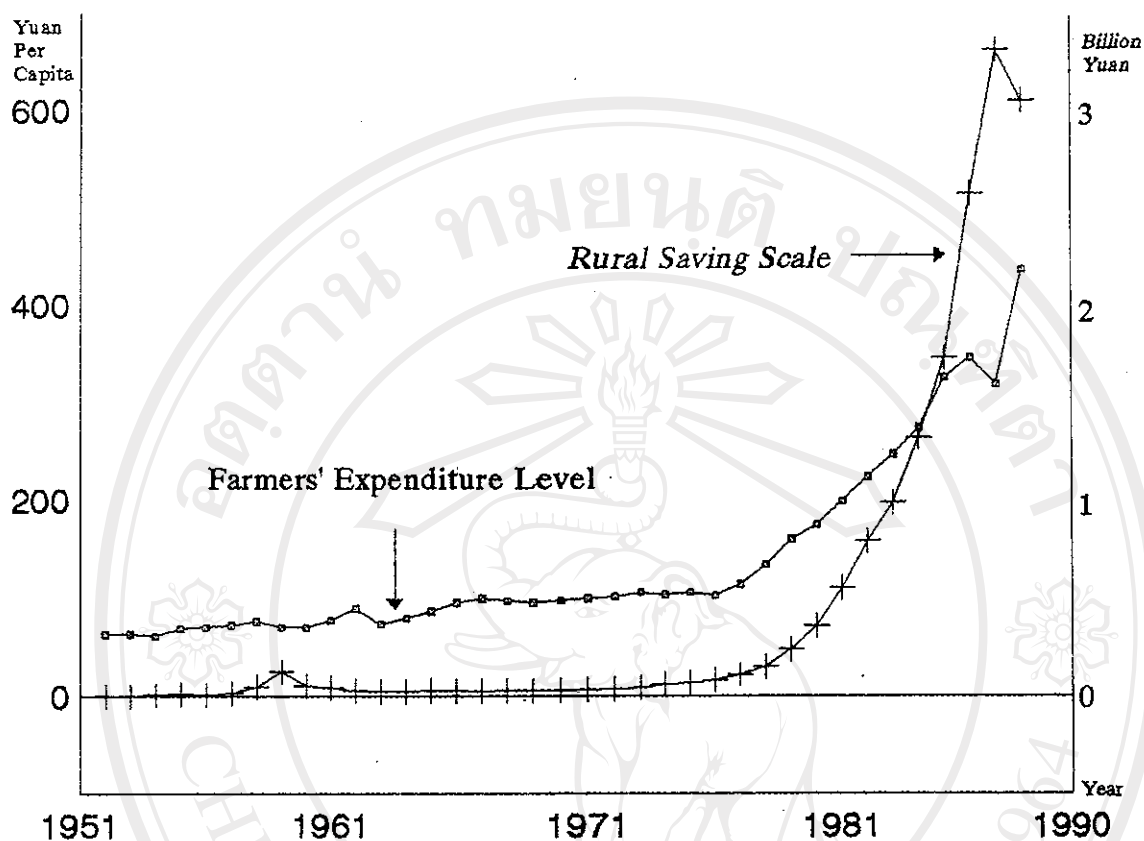


Figure 7 Rural Saving and Expenditure Level

Source: Data from Xiao (1989).

5.2.1 Stability of Agricultural Prices and Supply

Before 1978, under the government monopoly system of agricultural marketing, prices and supplies used to be frequently manipulated and frozen artificially at certain levels. Therefore, even though prices and supply seems to have little movement along the years, this did not mean that the market demand and supply were well balanced.

In recent years, after the government liberalized the agricultural market, agricultural production and farm prices of both government controlled and uncontrolled crops fluctuated remarkably. This was cause for concern because it had significantly increased the market risks of farmers' production even though the prices of their products had been raised higher. In Hunan province, cotton output in 1988 was only 1/3 of what it was in 1984, and the official farm price almost doubled over the same period. Ramie price in 1986 was 5 times of the 1984, which resulted the output in 1987 soared to the record level and greatly exceeded the market demand, and the free market price was only 1/5th of what it was in 1984-85 (*Figures 8 to 5.11*). Other crops like sugarcane and tobacco outputs experienced similar fluctuation.

The transformation of the marketing system is found to have directly triggered the supply and price fluctuations in the agricultural market. In the past the government used various production plans to stabilize agricultural production, such as price freezing or fixing measures, and the rationing system to stabilize market prices of agricultural products. When government controls over production gradually vanished, and government interventions on marketing business gradually reduced in the 1980s, the free market mechanism was yet to be able to function as market facilities, such as market information and market storage services, was undeveloped. Under this situation the agricultural market surely would be irregular, therefore the way to lead the market out of the situation is to help the free market to function as soon as possible.

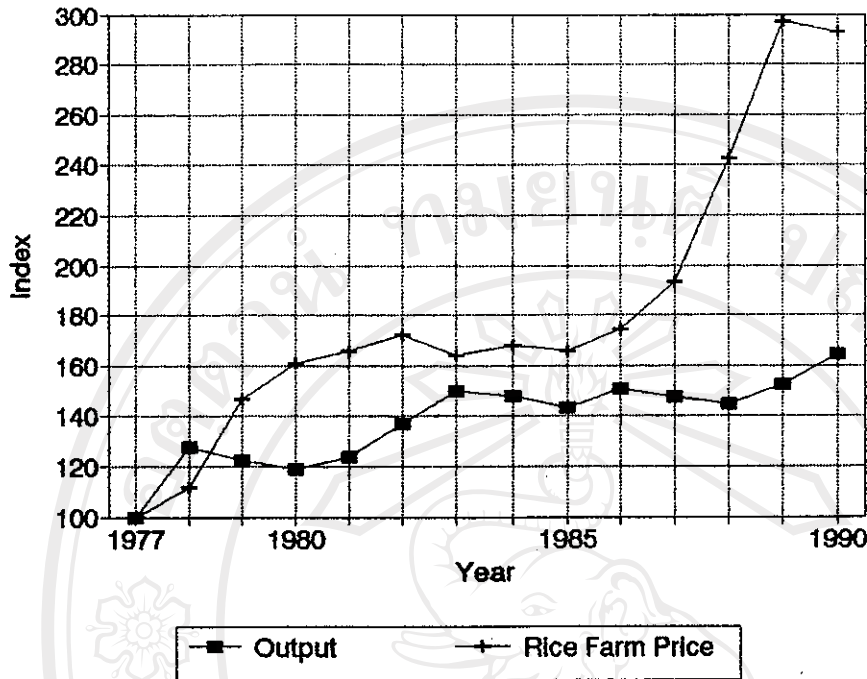


Figure 8 Rice Price and Output

Source: Data from Xiao (1989).

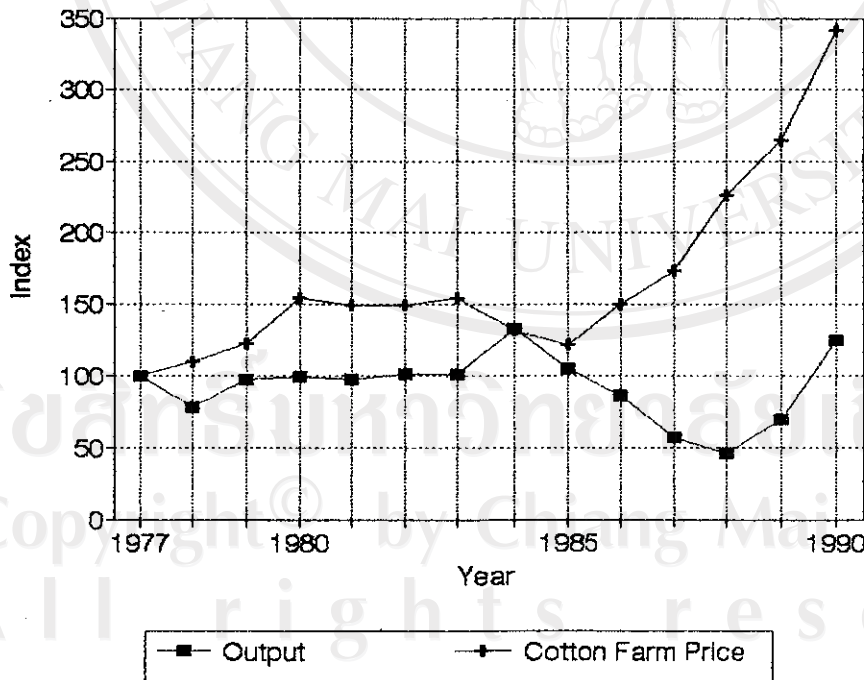


Figure 9 Cotton Price and Output Fluctuation

Source: Data from Xiao (1989).

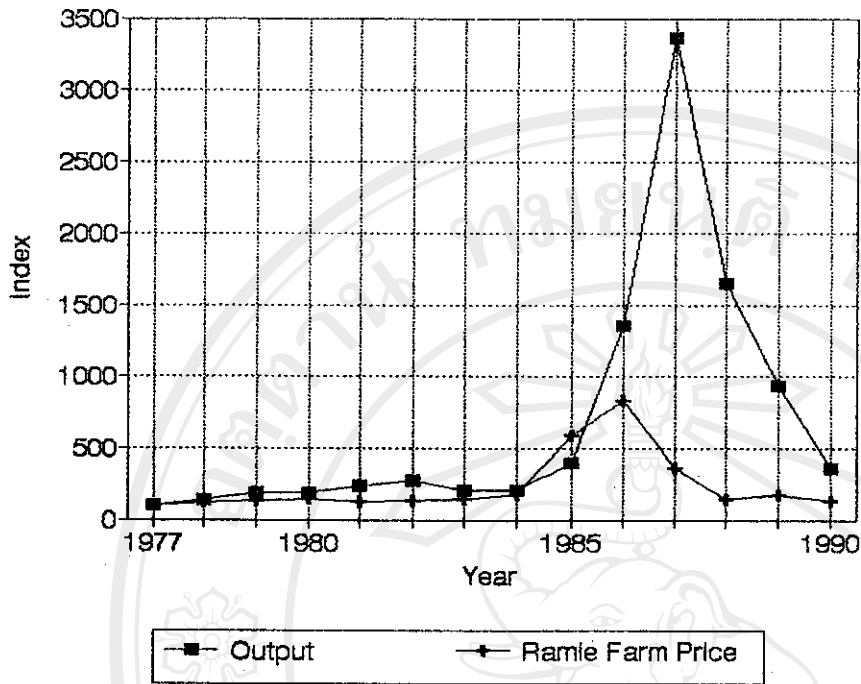


Figure 10 Ramie Price and Output Fluctuation

Source: Data from Xiao (1989).

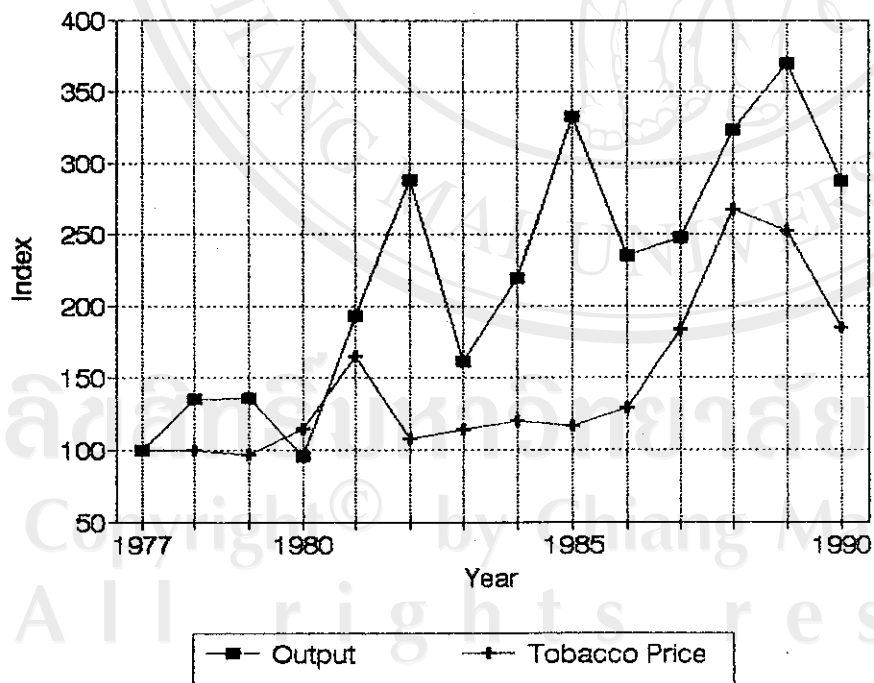


Figure 11 Tobacco Price and Output Fluctuation

Source: Data from Xiao (1989).

5.2.2 Farm Price, Marketing Cost and Marketing Margin

Under government marketing control, farm prices used to be set at low levels to guarantee the welfare of urban citizens and to reduce the raw material cost of agro-industry operations. Marketing cost was relatively high because it was conducted in a bureaucratic pattern with little concerns of economic circumstance other than government policies. In order to fulfil various marketing plans, local government had to dramatically increase the number of officials and spend more administrative time to reinforce and guarantee the carrying out of marketing operations. Since the government sold products to consumers and processors at an artificially low prices which were usually lower than the procurement prices (Figures 12 and 13), the marketing margin of

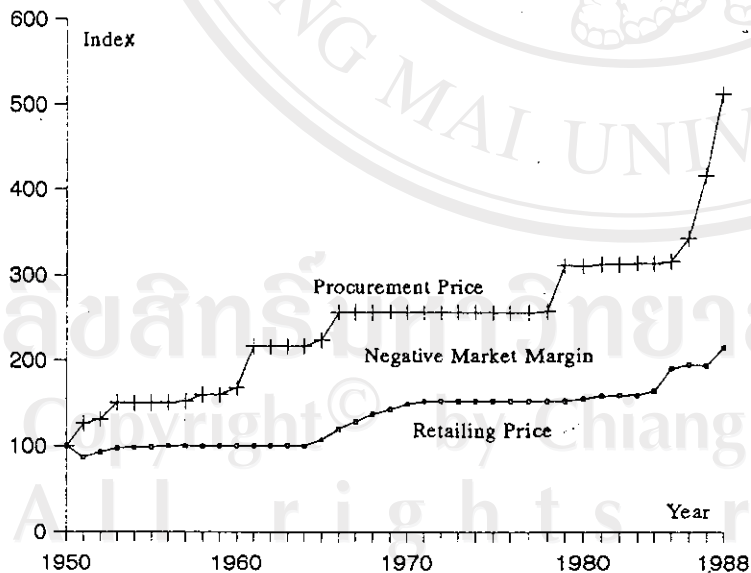


Figure 12 Marketing Margin of Grain in Hunan

Source: Data from Xiao (1989).

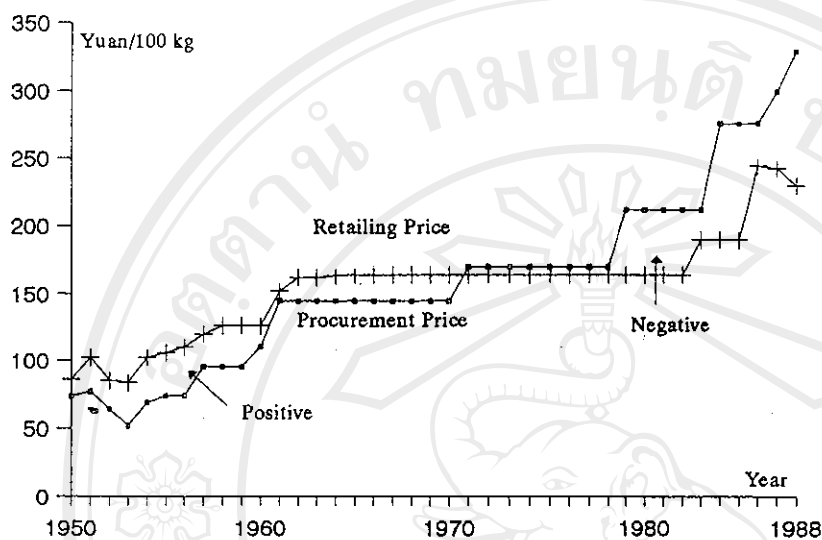


Figure 5.13 Marketing Margin of Edible Oil in Hunan

Source: Data from Xiao (1989).

grain and some times the edible oil was negative. In order to keep the marketing system function continuously, a huge amount of government subsidies flowed into agricultural marketing to make up for the price gaps and to finance marketing operation cost. For this reason, the marketing cost level may have been hidden behind those government subsidies. According to provincial statistics, government interventions and controls of the marketing of major agricultural products have resulted in an accumulating marketing subsidy burden. It has absorbed about 1/5 of the provincial annual financial budget in the past 15 years which gives the government little space to breath (Table 16). For this reason the government has cautiously tried various measures to release

its control in recent years.

The negative marketing margins of most agricultural products also prevented the private marketing sector from entering the business in the past, because they did not receive any subsidy from the government. It was argued that huge government subsidy encouraged bureaucracy and inefficiency, corruption of official marketing agents, ordinary consumers were only benefitted from a very small fraction of government subsidy while producers were still unsatisfied with their low farm prices.

Table 16 Government Subsidies for Marketing of Grain & Edible Oil

Unit: million yuan

Year	1978	1982	1986	1987	1990	1979-1987
Marketing Subsidy	250	460	1090	1080	1350	8460
Proportion of Finance	10.5%	14.2%	20.1%	19.3%	24.4%	22.2%

Source: Hunan Grain & Oil Administration Bureau (1992).

5.2.3 Agricultural Specialization, Productivity and Growth Rate

Agricultural specialization has been very low in Hunan, the undeveloped marketing system has partly contributed to this. Firstly, government policy of compulsory procurement of grain, industrial crop products restricted farmers from specialized productions of some single crops. Secondly, the agricultural market capacity is very small in terms of providing food and other products to consumers, it can not guarantee farmers the product availability and accessibility. In order to reduce

the risk of unable to secure their needs from the market, farmers adopt the strategy of self-sufficiency which means grow as much for their self-consumption as possible. In this case, agriculture become less specialized, the cost level of farmers' production operation is high with immense labor input and few machinery and infrastructure inputs. Therefore, agricultural productivity and growth rate are negatively affected.

5.2.4 Land Utilization

Even though the land utilization rate was quite high compared with that in other countries, farmland was not efficiently used with respect to per capita agroproduct output in Hunan. As a result of the low prices and the difficulty to access possible markets, farmers were not interested in farming more land than the amount enough for their subsistence needs. More and more rural labors rushed to seek off-farm jobs which offered them more cash income. A lot of agricultural land has been changed to non-agricultural utilization which can generate more income than growing crops. As a result, the amount of farmland declined in an accelerating rate, a lot of low quality land, marginal land and unclaimed arable land were left idle. This problem is particularly severe in certain city suburbs and in the southern and eastern parts of the province. Moreover, eventhough most of the farmland is cultivated regularly, but the input level to land is low for the reason of low economic return to investment, this invisible loss is the largest part of the total loss.

5.2.5 Farmers' Income Level, Composition and Distribution

Farmers' household income used to be mainly from various agricultural activities, but now it is diversified by including more non-farm activities. The percentage of farmers' income from agricultural production decreased from 81% to 66% during the 1980-1990 period, while the non-agricultural production sector increased from 7% to 25% at the same time (Table 17).

Table 17 Farmers' Income Sources

	1980	1985	1989	1990
	Per capita income (Yuan)			
Annual Income	219.72	395.26	558.34	545.69
From Agricultural Production	178.69	286.01	369.88	358.44
From Non-agri. Production	15.18	79.44	145.61	137.60
From Other Sources	25.87	29.31	42.85	49.64
	Share to annual total income (%)			
From Agricultural Production	81	72	66	66
From Non-agri. Production	7	20	26	25
From Other Sources	12	8	8	9

Source: Hunan Statistics Bureau (1990).

The income levels among farmers growing different crops or engaged in different non-farm activities had significant gaps (Table 18). It was argued that those income gaps were created by unfair product comparative price structure and government pricing policies which set agricultural products at low levels. Average farmers' income level in

Hunan is about 50% to 75% lower than an ordinary worker in big cities in 1990.

Market fluctuations also resulted in fluctuations of farmers' income. For example, in 1986, the return to land of ramie was 20 folds of rice, and 10 folds of tobacco and it is also 4 times its return in 1984 (*Table 18*).

Farmers frequently complained that it was difficult to get quick payment from government marketing agencies for their official procurement of agroproducts. Instead of obtaining cash for their products farmers sometimes get IOU bills only because local government deduced various taxes from the procurement, and delayed the payment deliberately whenever they faced financial difficulty. Therefore, farmers' income from official procurement was affected.

Table 18 Economic Returns to Land and Labor

Years	1980	1982	1984	1986	1988	1990
Net Return to Land (yuan/mu)						
Rice	6.4	34.1	27.7	53.0	123.1	175.8
Cotton	55.1	50.5	96.4	167.6	406.6	695.2
Ramie	151.3	139.9	277.4	1234.2	843.4	301.2
Tobacco	95.3	133.9	171.0	128.3	228.0	247.0
Net Return to Labor (yuan/day)						
Rice	1.05	2.30	2.82	4.29	5.71	7.91
Cotton	1.99	2.19	3.33	5.40	7.68	11.65
Ramie	3.70	4.73	6.56	20.39	13.75	6.68
Tobacco	2.01	3.94	4.31	4.26	5.71	8.15

Source: Hunan Statistics Bureau.

Note: calculated with facing year prices (monetary term).
Return to labor is the ratio of net income to the working days on the crop of a ordinary labor.

5.2.6 Agricultural Input Level

As the government maintained the agricultural input prices at artificially low levels in order to provide input incentives to agricultural production sector, most agricultural input production enterprises operated with huge losses. Therefore, huge amount of subsidy from the government was used to keep input producers in production. Nevertheless, this sector developed very slowly. Its production capacity remained low and its production could not satisfy the increasing demand.

As a result of low agricultural price, low farm income and limited input supply, the application of agricultural inputs to farm land was quite low. Fertilizer use per mu of crop planted area was only

46kg/mu (690 kg/hectare) in 1990. The utilization of agricultural machinery was very low (Table 19). Agricultural growth was severely constrained by these factors.

Table 19 Agricultural Input Utilization in Hunan

	unit	1989	1990
Fertilizer Applied Amount (of Crop Planted Area)	kg/mu	45	46
Effectively Irrigated Field	mu	40,113,000	40,143,300
Machine Plowed Field	mu	9,911,800	15,521,100
Machine Sowed Field	mu	14,500	500
Machine Harvested Field	mu	58,000	16,700

Source: Hunan Agricultural Bureau.

5.2.7 Resource Allocation and Economic Efficiency

The "Dual-Track" market which is the mix of planned and free pricing and marketing has created significant price gaps between the free market prices and several government purchasing prices. This system was initially introduced as a temporary transitional stage of the market reform program in 1984 (Wang *et al.*, 1991), but it remained longer than expected, and consequently created chaos in the economy. Firstly, empirical studies have shown that the planned trading system, in combination with the production targets system, depressed farmers' incentive for production and inefficient resource allocation (An, 1987). Secondly, price gaps among different regions or enterprises also created unfair discrimination among both consumers and processors.

Firstly, agricultural structure was unstable and unreasonable because while some products were in over-supply others were in under-supply. There are many factors responsible for this situation. One major factor is that the relative price of crops failed to reflect market demand for those products. Secondly, to some extent, farmers are price-takers, they are very sensitive to short-term market situations. With the limitation of market experience and knowledge, it is difficult for them to anticipate prices and market risk when the marketing system was liberalized.

Hunan province is a leading rice producer in China in terms of productivity and growing area. Unfortunately, it became the biggest victim of the current market liberalization. While the farmers were still urged to produce more rice for the sake of the whole country, the huge amount of unmarketable low quality rice in this province reached the high record level of 6.5 million ton in 1992 (*The People's Daily*, Nov. 1, 1992) which is by far a burden to the provincial finance. This economic disaster will finally hurt the farmers and agricultural growth in the province.

5.2.8 Consumers' Welfare

For the consumers and processors of agricultural products, the direct and indirect government subsidies to the marketing of agroproducts, enabled them to obtain cheap food and raw materials. The rationing system guaranteed consumers and processors the supply security of many products they needed.

On the other hand, strict government control and the rigid rationing system had an indirect negative impact on the consumers. Firstly, the artificially low agroproduct prices constrained the increase of agricultural production. Therefore, meat, oil, and many other food products were in persistent short-supply in the past. Consumers could not purchase sufficient commodities through the rationing system, they had to pay high prices in the black market or in the free market (if exist) once they needed more. Secondly, consumers frequently found that they had to accept commodities they did not like from the agency-like shops under the rationing system as there was no alternative goods for them and no alternative places to turn to. Thirdly, government marketing agencies became bureaucratic and inefficient, their management was poor as they did not need to make the effort to attract consumers. With the market liberalization, these problems are disappearing and the picture changed quite a lot in recent years, consumers now are free to have choices in buying, but they have to pay a little bit higher price than before.

5.2.9 Regional Marketing Business Protection

Because the marketing of certain agricultural products are highly profitable in terms of tax collection and prevention of the sufficiency of raw materials for local agro-industry, local government widely practice protectionism through public regulations and prohibit farmers sell their products to other regions directly (*Cheng, 1989*). This can be viewed from the marketing wars of tobacco, cotton, silk

cocoon and etc. For example, on March 24, 1982, the office of the provincial government issued a instruction that: all agroproducts classified in category 1 and 2 were not allowed to be transported outside the province without special permission from certain government departments⁴. Inspection points were set up along the roads leading to neighboring provinces. This kind of practices severely damaged inter-regional trade and agricultural specialization. Since the implementation of market liberalization policy, the central government has banned local government to practice regional protectionism.



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⁴ Agroproducts in category 1 and 2 were the most important food and industrial raw products, these items used to be under government marketing control.