

INTRODUCTION

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I. AGRICULTURAL REFORMS IN CHINA

THIS special issue examines the impact of the ongoing liberalization of the Chinese economy on the production and distribution of agricultural products and on the labor market in the rural areas of China. China's agricultural reforms began with the adoption of the "Decisions on Some Problems concerning the Acceleration of Agricultural Development (draft)"¹ at the Third Plenum of the Eleventh Central Committee of the Chinese Communist Party held in December 1978. Deng Xiaoping was reinstated at the same time. The start of reforms was followed by price increases on agricultural products, such as grains, and price reductions on industrial inputs. In 1983 farmers were allowed to employ up to seven farm hands, and in 1984 they could acquire licenses to engage in inter-provincial transport and sales businesses. With the introduction of the agricultural responsibility system for output in that year, the people's commune system was finally brought to an end. Following this, the "system of household responsibility for management" (*baogan daohu zhi*) and the "system of household responsibility for output" (*baochan daohu zhi*) came into wide practice whereby individual farmers took on farming responsibilities that had previously belonged to people's communes. Subsequently, farmers were even permitted to lease out their farmland (*zhouanbao*).

With the second stage of agricultural reforms, the market mechanism was introduced in 1984. This led to the establishment of a double-track system of government procurement prices running in parallel with free-market prices. The State Council replaced the government procurement system with a government contract purchasing system. Under this system farmers were allowed to sell surplus grain on the open market once they had delivered their quota of grain to the government.

In 1986 the Land Administration Law² was enacted. Under this law the govern-

¹ Chinese Communist Party Central Committee, "Zhonggong zhongyang guanyu jiakuai nongye fazhan rugan wenti de jue ding (cao'an)" [Decisions on some problems concerning the acceleration of agricultural development (draft)], *Zhonggong yanjiu* 13, no. 5 (1979). (To the author's knowledge, the draft of the decisions adopted at the Third Plenum has been made public only in this issue of the journal.) For the formal decisions adopted by the Fourth Plenum, see *Renmin ribao*, October 6, 1979.

² "Zhonghua Renmin Gongheguo tudi guanri fa" [Land administration law of the People's Republic of China], *Renmin ribao*, June 27, 1986.

ment increased its buying at negotiated prices in order to give farmers greater incentive to increase production. The negotiated prices were higher than the contract purchasing prices but lower than free-market prices. A tax on the use of agricultural land was introduced in 1987. After the Tian'anmen Incident in 1989 and the strengthened position of the conservatives, the government directed the provincial governments to establish an agricultural development fund system. This was intended for developing agricultural infrastructure.

During 1990 the government oversaw the establishment of a wholesale grain market, a grain futures market, and a grain reserve system. The National Grain Reserve Bureau was set up as part of the grain reserve system. In 1991 the government opened the markets up while maintaining its own purchasing system. This meant that once the grain purchasing target was achieved, the government could engage in the operation of the market by adjusting the quantity of reserves held as a buffer stock. However, government purchases were limited to products from major areas of production or those produced by large-scale farms.

The third stage of agricultural reforms commenced with the reform of the grain distribution system in 1993. The grain control system operates at the central and local government levels. Under this system the central government is responsible for national grain reserves and for the export and import of grain, while local governments are responsible for maintaining the balance of grain supply and demand and for overseeing the reserves within their jurisdictions. The State Council adopted a system of protective prices that were in effect guaranteed prices, and engaged in market operations to maintain grain price stability. This step can be seen as a move from a system of direct control to one of indirect control of grain.

The Agricultural Law³ was enacted in 1993. Following this, two systems were introduced in May 1994 to achieve a supply and demand balance in agricultural products. Under the first system, provincial governors were made responsible for grain supply and demand. The second system placed municipal heads in charge of foods such as vegetables. However, this attempt to achieve a balance through administrative measures relied less on the price mechanism and more on the control of the quantity of foods which seemed to run counter to the marketization of the economy.

In June 1998 the General Office of the CCP Central Committee and the General Office of the State Council announced the Grain Purchasing Regulations.⁴ These allowed only state-owned grain enterprises to purchase grain in rural areas and prohibited private merchants and private enterprises from doing so. However, grain processing enterprises and organizations in need of grain were allowed to purchase

³ "Zhonghua Renmin Gongheguo nongye fa" [Agricultural law of the People's Republic of China], *Renmin ribao*, July 4, 1993.

⁴ "Liangshi shougou tiaoli" [Grain purchasing regulations], *Renmin ribao*, June 12, 1998.

grain in markets operating at or above the county level. In October 1998 the government decided to liquidate the Beijing Commodity Exchange which was in an anarchic state and had failed to conduct market trading in a sound way. Subsequently the eleven commodity exchanges across the country were integrated into three exchanges in Shanghai, Zhengzhou, and Dalian.

These reforms prompted a dramatic growth in China's agricultural productivity and a marked increase in agricultural production. Since 1995 agricultural production has exceeded 450 million tons a year and led to the problem of a grain surplus. How are the farmers changing in response to these reforms? According to the results of the agricultural census released in 1997, the ratio of part-time farmers engaged principally in agriculture relative to the total number of farmers stood at 33.57 per cent. The ratio of part-time farmers to full-time farmers was 1:2, with the latter decreasing to 62.81 per cent of the total number of farmers.⁵ Moreover, in order to improve the productivity of family farms, it will be necessary to concentrate farmland in the hands of specialized farmers and realize economies of scale, instead of allowing individual farmers to run their small lots of land. For this to happen there will have to be a market for the right to use land. However, the establishment of a labor market is a major prerequisite for the marketization of the right to use land. This requires measures that provide for the smooth uptake of farmers into employment in the industrial and services sectors in urban areas, as well as the establishment of a social safety net in the form of unemployment insurance and vocational retraining programs in case these people lose their jobs.

II. ANALYSIS OF AGRICULTURE IN CHINA

This special issue analyzes the evolution of China's agricultural reforms and their impact at the level of the farm household. The first article undertakes a theoretical and comprehensive analysis of the subject. The other two papers provide a study of Heilongjiang Province which has an exceptionally high commercialized ratio of grain, and present an empirical analysis based on farm surveys conducted in 1998–99. Heilongjiang Province is one of China's largest grain producers. Its 1997 output of 31 million tons ranked fifth after Henan, Shandong, Jiangsu, and Sichuan Provinces, and its sown area of 7,994,000 hectares in Heilongjiang is the third largest, after Henan and Shandong Provinces. However, grain yield is low at 4,596.1 kilograms per hectare.

In the first article I begin with an analysis of the relationship between economic liberalization and the reform of the grain distribution system, and also the relation-

⁵ "Diyici chuanguo nongye pucha kuaisu zonghui jieguo gongbao" [Bulletin on the results of the quick comprehensive summary of the first nationwide agricultural census], *Renmin ribao*, December 31, 1997 and January 13 and 20, 1998.

ship between economic liberalization and the terms of trade between the agricultural and industrial sectors. The paper then confirms that the present reform of the grain distribution system represents a shift from the tradition of directly controlled management to indirectly controlled management. The paper also examines from a macro-level perspective the grain supply behavior of farmers under the double-track (government price/market price) system as well as the tendency, seen frequently among farmers, for quota evasion. From a micro-level perspective the paper builds a subjective equilibrium model for farm households. The model is composed of a model of the behavior of a part-time farmer and a model of the behavior of a full-time farmer (who employs agricultural labor). This subjective equilibrium model is utilized to clarify the grain supply behavior of farm households. The micro-level analysis confirms that farmers are often inclined to evade quotas under the double-track system. This implies that in order to expand grain production the government should give production incentives to farmers through constant increases in the government price and through decreases in the prices of industrial inputs as well as increases in the supply of these inputs. Given the differentials between domestic and international prices, however, price increases under this grain price policy have reached a ceiling. I conclude that with its admittance to the World Trade Organization and opening-up of the market for agricultural products in the near future, China will have to improve agricultural productivity by undertaking structural adjustment reform.

The subjective equilibrium model that I devised can also be utilized to analyze other facets of farmer behaviors as described in the second and third papers of this issue dealing respectively with the rice-selling behavior and migrant behavior of farmers. The details of the application of the model to these topics are provided in the second section of my article.

The second paper in this issue by Toshiyuki Kako and Jianping Zhang takes up the subject of rice production and sales in Heilongjiang Province. It surveys the production and sales problems facing rice-growing households under the state farm under the jurisdiction of the Jiansanjiang Land Reclamation Branch. This is located on the Sanjiang Plain where most "state farms" have been dissolved into individual family farms as a result of reforms. The paper shows that despite the Grain Purchasing Regulations of 1998 restricting grain purchasing to state-owned grain enterprises, farmers sell only the stipulated amount of contract rice to these enterprises and the remaining amount to private merchants. The government maintains a protective price policy for grain which was begun in 1993, although grain production in China has continued to exceed demand since 1996. This makes one wonder if China has resorted to the agricultural price support policy often employed by advanced countries with grain overproduction. At least this is the view expressed in both the first and second papers. Kako and Zhang also point out that it is important to build road networks and other means of transportation, and rice storage facilities,

and to establish an agricultural financing system and joint grain sale organizations to give greater encouragement to rice farmers who can expect to face the challenges of international competition.

The paper by Wang Tianhong, Atsushi Maruyama, and Masao Kikuchi is based on a survey of the labor market in Harbin City and two farming villages within Heilongjiang Province. It confirms that the wage differential between the agricultural sector and the urban informal sector is a major incentive for labor migration from farming villages to cities. W. A. Lewis (1954) hypothesized the existence of a dual economy in developing countries where there is a rural sector with a limited supply of land and unlimited supply of labor and an urban sector with relatively higher wages. This induces the movement of labor from the former to the latter sector. It is interesting that Wang, Maruyama, and Kikuchi have found that migration from the rural to urban sectors occurred even in Heilongjiang Province where labor mobility under the dual economy would be considered theoretically improbable, as claimed by Lewis, due to the province's unlimited supply of land and relatively small population. The authors claim that the incentive for labor migration that took place in the study region can be fully explainable by the wage discrepancy between the urban and rural sectors. This is interesting because the incentives for labor migration have usually been related to expected wages as claimed in the Harris-Todaro model (Harris and Todaro 1970).

Wang et al. then proceed to analyze migrant workers in Harbin City. A majority of the farmers who have moved to the city tend to find jobs in the informal sector. An overwhelmingly large proportion of the workers in the urban informal sector comes from farming villages in Heilongjiang Province. There are some blue-collar workers in the urban formal sector who hail from farming villages. This finding indicates that there are either few, or very low entry barriers between the two urban labor markets (the labor market in the informal sector and the blue-collar labor market within the formal sector). This paper also compares the wages in the urban informal labor market with those in the urban blue-collar labor market. The comparison shows that it is reasonable to assume that the two labor markets are virtually integrated. This means that farmers can enter the blue-collar labor market in the urban formal sector either directly or via the urban informal sector.

III. TOWARD INTEGRATION OF AGRICULTURE AND RELATED INDUSTRIES

Agricultural productivity in China improved noticeably under the Deng Xiaoping regime as a result of price and organizational reforms. The introduction of the agricultural responsibility system for output led to the decollectivization of the people's communes. Under the newly introduced responsibility system, individual farmers first took part in the system of household responsibility for output, but they gradu-

ally shifted their preference to the system of household responsibility for management. In terms of agricultural economics, this shift can be compared to a change from a sharecropping to fixed rent system.

However, agricultural price increases resulting from the price reforms have increased domestic prices relative to international prices. As a result, Chinese agricultural products have been losing their international price competitiveness. To cope with this problem, the government's price policy should be replaced by a policy of structural adjustment. If individual farmers are to raise their productivity, economies of scale must be realized. What is needed now is the establishment of a market for the right to use land and the enhancement of the liquidity of land. To achieve this, five approaches are available to farmers and to the local government: (1) contracts for renting land can be made between farmers; (2) collective economic organizations can borrow land from a large number of farmers and rent the land out to a small number of farmers who become responsible for production; (3) the two fields system (*liangtian zhi*) can be adopted whereby the fields of grain for personal consumption (*kouliang tian*) can be managed by any farmers, while the fields of responsibility (*zeren tian*), or the fields of commercial grain, can be operated only by large farmers on a contract basis decided by auction; (4) certain areas of land, which farmers have declined to operate on a contractual basis, can be aggregated and organized for large-scale farming; and (5) rights to use land can be converted into shares with the formation of cooperative shareholding enterprises (Chen 1995). Of these approaches, the two fields system is the most popular, but it has yet to cover even half of all the land in China, simply because of the high contracting fees.

Our next subject is the issue of technological progress in agriculture. Lester Brown predicted that China would not be self-sufficient in grain and would, in the long run, become a huge grain-importing country. The State Council refuted this prediction by contending that agricultural technology in China has helped to increase agricultural output by some 35 per cent and that this figure will reach 50 per cent in 2000, and attain the level of a developed country in 2030.⁶ Indeed, in terms of the total factor productivity index (TFPI), agriculture in China has ample potential for further growth. In the TFPI estimation in my paper, the TFPI growth rate for 1952–96 was 1.20 per cent per annum, and the contribution of total factor productivity was 36.65 per cent. This level is still low and suggests that there is potential for further growth.⁷ To achieve this China must promote R&D and develop its agricultural infrastructure. However, as these are public goods they should be developed by the public sector rather than being left to the market mechanism.

Renmin ribao published in its December 11, 1995 issue an editorial titled “Dis-

⁶ Information Office, State Council, “The Grain Issue in China,” *Beijing Review*, November 11–17, 1996.

⁷ For some evidence concerning this point, see Yamamoto (1999, chaps. 1 and 7).

cussing Agricultural Integration.”⁸ This article is indicative of the government’s decision to promote the industrialization of agriculture, viz. the integration of agriculture with other industrial sectors. The process will be achieved in the following manner. The central actors for industrializing agriculture should be “village-level enterprises and individual farm households.” In each village the village committee is to establish an “economic development enterprise” using a fund derived from assets under collective ownership. This enterprise is to conclude purchase and sales agreements with individual farmers. The enterprise would be central to the purchasing of agricultural products at prescribed prices, and would provide various services and engage in the integrated management of production, supply, and purchasing. When the enterprise generates profits, farmers would be entitled to profit distributed from the collective income. Under this system enterprise profits could be used to organize the farmers and increase output and income.⁹

T. W. Schultz (1945) once referred to grain supply and demand and farmer employment as two major agricultural problems. The former problem is important, of course, but the issue of farmer employment has assumed greater importance as a problem that the Chinese economy must face today. To effectively industrialize agriculture in China, surplus labor in the rural area will have to be absorbed by secondary and tertiary industries as the Wang, Maruyama, and Kikuchi paper demonstrates. For this to happen, the labor market must be developed and a social security system must be established for people without jobs. In other words, the agricultural problem in China is, in essence, a labor market issue.

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⁸ “Lun nongye changye hua” [Discussing agricultural integration], editorial, *Renmin ribao*, December 11, 1995.

⁹ For details about agricultural integration, see Niu Ruofeng (1997a, 1997b, 1997c).

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