

Economic Reforms in China: The Case of the Agricultural Sector*

Terry Y.S. Wu**

I. Introduction

China is the world's most populous country with more than one billion people, which accounts for about one-fifth of the world's population. By and large, the country's economy is predominantly agricultural and is characterized by a system of central planning and control. During the last decade, however, China has recorded a period of rapid economic growth, spurred on by the new economic policy to restructure and modernize its economy. The agricultural sector in China has performed exceptionally well since the reform measures were introduced in 1978. Bumper harvests have been recorded for several successive years due to increased incentives and efficiency in agriculture.

The purpose of this paper is to examine China's agricultural sector with emphasis on the reform program. Section 2 considers the key components of the reform program in agriculture, which were introduced in late 1978. Section 3 analyzes China's overall economic performance under the reform program. The final section summarizes the results with a brief discussion of the prospects for China's agricultural sector.

II. Economic Reforms in Agriculture

The Chinese government believed that the prospects for rapid and continued economic growth in China relied largely on its ability to accelerate production in the agricultural sector. In order to improve incentives and management at all levels of the agricultural sector, China has acted quickly

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** Faculty of Administration, University of Regina, Regina, Saskatchewan, Canada.

to implement the restructuring of rural institutions and agricultural price reforms since 1979. This section is focussed on the discussions of these two major policy instruments adopted by the Chinese government.

A. Rural Institutional Reforms

Following the announcement of the economic reform policy in 1978, the Chinese government has moved promptly to implement an extensive restructuring of rural institutions. The government's initial step was to abolish collective farming in the rural areas, allowing farm household to become the basic management and production unit in the agricultural sector. But the major feature of the reforms was the introduction of the production responsibility system, which was designed to improve management and productivity in the agricultural economy.¹

The production responsibility system was a system of contractual relationships which defined the rights and responsibilities of owners (state, collective, or private) and managers of assets (World Bank, p. 2). The objective of such a system was to allow independent decision making in both the production and marketing of agricultural commodities. It should be noted that there were various forms of the production responsibility system used in agriculture. The most commonly used in the agricultural sector was the "household total responsibility system" (*bao gan dao hu*).² Under the "household total responsibility system," the operation of collectively-owned land was contracted to farm households according to household size or labour availability. Each household was required to pay taxes, meet state procurement obligations, and provide labour to build or unkeep public infrastructure. All agricultural outputs produced in excess of the state production quotas could be retained by the household and sold in a free market. Thus, the contract system provided monetary rewards to those farmers who are able to increase agricultural production.

B. Price Reforms

Prior to the economic reforms of 1979, the state had rigid price controls over agricultural commodities. In 1978, the Chinese government made major changes in its farm price levels because of the concern that the existing price structure did not provide adequate income and incentives for

¹ For a review of the production responsibility system, see Tsou, Blecher and Meisner, pp. 41-103.

² According to one estimate, there were approximately ten different forms of the "responsibility system." For details, see Tsou, Blecher, and Meisner, pp. 57-59.

the crop mix which the government preferred. The new farm price structure consisted of four types of prices: (i) quota prices; (ii) above quota prices, (iii) negotiated prices; and (iv) free market prices (Perry and Wong, p. 10-11). Quota prices were paid to crops sold for meeting state procurement quotas, while above quota prices applied to crops sales which exceeded state quotas. Once the farmers had fulfilled the state quotas, they could sell the remaining farm products at negotiated or free market prices. Negotiated prices referred to prices of crops sold to the state by farmers for products which could otherwise legally be sold on the free market. Consequently, the state encouraged greater production by buying surplus grain from farmers at negotiated prices. The market prices were determined by market demand and supply on the open market. In general, negotiated prices, which fluctuated at approximately parity with free market prices, were 10 to 20% higher than above quota prices (Wiens, p. 321). Of the total value of net procurement of agricultural output in 1983, 48 percent was at quota prices, 28 percent at above quota prices, 13 percent at negotiated or market prices, and 11 percent with free market sales to the nonfarm population (World Bank, p. 9).

III. Agricultural Production under the Reforms

Reforms can be judged successful if they have had a significant impact on the performance of the economy. An obvious question is: Have the agricultural reforms been successful in increasing the national output and income? In order to answer this question, it is necessary to demonstrate the changes in the economy since the implementation of agricultural reforms. This section presents the agricultural production as well as major economic indicators since 1978.

Grain production increased by 3.2 percent annually from 304.8 million tonnes in 1978 to 379 million tonnes in 1985 despite the gradual decline in sown area of 0.6 percent per year. Table 1 illustrates the production of major agricultural products in China between 1978 and 1985. The most rapid annual growth rates were reported for wheat (6.9%) and soybeans (4.7%). Rice production rose by 3 percent annually while corn grew by only 1.9 percent per annum. Industrial crops (cotton, peanuts, rapeseed, sesame, and sugar cane) recorded rapid growth rates. For example, cotton increased at an annual average rate of 10 percent due to higher yields and large planted area. The rapid growth in production is due to the introduction of new varieties of cotton and specialization incentives. During 1978-85, production of oilseed crops (peanuts, rapeseed, and sesame) increased by 182.6 percent because of increased sown area and

Table 1
 PRODUCTION OF MAJOR AGRICULTURAL PRODUCTS, 1978-85

| Year | Rice | Wheat | Corn | Soybeans | Cotton | Peanuts, | | | Beef, Pork and Mutton |
|----------------------------|-------|-------|------|----------|--------|-------------------------|----------------|--------|--------------------------|
| | | | | | | Rapeseed, and Sesame | Sugar- cane | Fruits | |
| 1978 | 136.9 | 53.8 | 56.0 | 7.6 | 2.1 | 4.6 | 21.1 | 6.6 | 8.6 |
| 1979 | 143.8 | 62.7 | 60.0 | 7.5 | 2.2 | 5.6 | 21.5 | 7.0 | 10.6 |
| 1980 | 139.9 | 55.2 | 62.6 | 7.9 | 2.7 | 6.2 | 22.8 | 6.8 | 12.1 |
| 1981 | 144.0 | 59.6 | 59.2 | 9.3 | 3.0 | 8.4 | 29.7 | 7.8 | 12.6 |
| 1982 | 161.6 | 68.5 | 60.6 | 9.0 | 3.6 | 9.9 | 36.9 | 7.7 | 13.5 |
| 1983 | 168.9 | 81.4 | 68.2 | 9.8 | 4.6 | 8.6 | 31.1 | 9.5 | 14.0 |
| 1984 | 178.3 | 87.8 | 73.4 | 9.7 | 6.3 | 9.5 | 39.5 | 9.8 | 15.4 |
| 1985 | 168.6 | 85.8 | 63.8 | 10.5 | 4.1 | 13.0 | 51.5 | 11.6 | 17.6 |
| % Change 1978-85 | 23.2 | 59.5 | 13.9 | 38.2 | 95.2 | 182.6 | 144.1 | 75.8 | 104.7 |
| Average % Change per Annum | 3.0 | 6.9 | 1.9 | 4.7 | 10.0 | 16.0 | 13.6 | 8.4 | 10.8 |

Sources: United Nations, *Statistical Yearbook for Asia and the Pacific*.
 State Statistical Bureau, *Statistical Yearbook of China 1986*.

higher yield. Sugarcane production was more than doubled due to higher price incentives. Fruit production has grown by about 8.4 percent per annum since 1978, largely due to increased yields. Meat production (beef, pork, and mutton) increased by 104.7 percent since 1978, with most of the gains derived from pork production.

Table 2 presents the total sown area and crop yield for the period 1978-85. As shown in Table 2, all grain sown area declined by 11.7 million hectares (9.7 percent) between 1978 and 1985 while all industrial crops increased by 7.9 million hectares (54.9 percent) during the same period. This reflects the fact that the 1978 agricultural reform policy has created a more balanced output structure by expanding the production of industrial crops. It should be emphasized that the impressive growth in China's grain output over the 1978-85 period was attributed to yield increases as the sown area under grain declined. Rice was the highest yielding grain (5.3 tonnes per hectare), while soybeans remained as a low yield crop (1.4 tonnes per hectare). The industrial crops yield increased at an impressive rate of 7.8 percent per annum due to price incentives and crop specializations. Of all the industrial crops, sugarcane had the highest yield of 51.5 tonnes per hectare in 1985.

In Table 3, the major economic indicators in the Chinese economy before and after the economic reforms are compared. During the 1978-85 period, China recorded an impressive growth in total output of society and agricultural output, accompanied by unprecedented acceleration in the growth of consumption expenditures and savings rate. As indicated in Table 3, total product of society in 1985 was 1,630.9 billion yuan, which was about 2.4 times those of 1978. This means that the economy grew at 13.2 percent (9.3 percent in real terms) annually over the 1978-85 period, compared with 8.6 percent (7.4 percent in real terms) over the 1950-78 period. Gross agricultural output increased by 292 percent since 1978, growing at an annual rate of 16.6 percent. During 1950-78, however, the annual growth rate of gross agricultural output was only 5.2 percent. The data show that agricultural production increased at a much faster rate since the implementation of agricultural reforms. As a result of increased income, per capita consumption expenditures also increased 12.8 percent from 175 yuan in 1978 to 407 yuan in 1985. Likewise, the savings rate was more than tripled, from 3.1 percent in 1978 to 9.9 percent in 1985. The evidence thus suggests that the standard of living in China has improved significantly since the introduction of the agricultural reforms. While agricultural tax revenues doubled under the reforms, an inflation of 3.6 percent also occurred during the 1978-85 period due to the elimination of the price controls.³

³ For a useful review of China's inflationary experience, see Chen and Hou (1986).

Table 2
TOTAL SOWN AREA AND CROP YIELD 1978-85

| Production | Unit | 1978 | 1985 | Percentage | Average |
|-----------------------------------------|------------------|-------|-------|------------|------------------------|
| | | | | Change (%) | Annual Growth Rate (%) |
| | | 1978 | 1985 | 1978-85 | 1978-85 |
| Rice | | | | | |
| Sown Area | million hectares | 34.4 | 32.1 | -6.7 | |
| Yield | tonnes/hectare | 4.0 | 5.3 | +32.5 | 4.1 |
| Wheat | | | | | |
| Sown Area | million hectares | 29.2 | 29.2 | 0 | |
| Yield | tonnes/hectare | 1.8 | 2.9 | +61.1 | 7.1 |
| Corn | | | | | |
| Sown Area | million hectares | 20.0 | 17.7 | -11.5 | |
| Yield | tonnes/hectare | 2.8 | 3.6 | +28.6 | 3.7 |
| Soybean | | | | | |
| Sown Area | million hectares | 7.1 | 7.7 | +8.5 | |
| Yield | tonnes/hectare | 1.1 | 1.4 | +27.3 | 3.5 |
| All Grain^a | | | | | |
| Sown Area | million hectares | 120.6 | 108.9 | -9.7 | |
| Yield | tonnes/hectare | 2.5 | 3.5 | +40.0 | 4.9 |
| Cotton | | | | | |
| Sown Area | million hectares | 4.9 | 5.1 | +4.1 | |
| Yield | tonnes/hectare | 0.4 | 0.8 | +100.0 | 10.4 |
| Oilseeds | | | | | |
| Sown Area | million hectares | 4.9 | 8.9 | +81.6 | |
| Yield | tonnes/hectare | 0.9 | 1.5 | +66.7 | 7.6 |
| Sugarcane | | | | | |
| Sown Area | million hectares | 0.5 | 1.0 | +100.0 | |
| Yield | tonnes/hectare | 42.2 | 51.5 | +22.0 | 2.9 |
| All Industrial Crops^b | | | | | |
| Sown Area | million hectares | 14.4 | 22.3 | +54.9 | |
| Yield | tonnes/hectare | 2.3 | 3.9 | +69.6 | 7.8 |

Notes: ^a All grains include rice, wheat, corn, soybeans, and miscellaneous grains.

^b All industrial crops include cotton, oilseeds, sugarcane, and other cash crops.

Source: Computed from State Statistical Bureau. *Statistical Yearbook of China 1986*.

Table 3
MAJOR ECONOMIC INDICATORS, 1950-1985

| | 1950 | 1978 | 1985 | Average Annual Growth Rate | |
|----------------------------------------------------------------|------------------|-------|---------|----------------------------|-------------|
| | | | | 1950-78 (%) | 1978-85 (%) |
| Total product of society ^a (in billions of yuan) | 68.3 | 684.6 | 1,630.9 | 8.6 | 13.2 |
| Total product per capita (in yuan) | 124 | 711 | 1,560 | 6.4 | 11.9 |
| Gross agricultural output (in billions of yuan) | 38.4 | 156.7 | 458.0 | 5.2 | 16.6 |
| Gross agricultural output per capita (in yuan) | 70 | 163 | 438 | 3.1 | 15.2 |
| Per capita consumption expenditures (in yuan) | 76 | 175 | 407 | 3.0 | 12.8 |
| Savings rate (in percentage) | 0.8 ^b | 3.1 | 9.9 | 5.0 | 18.0 |
| General price index (1952 = 100) | 100.0 | 135.9 | 174.1 | 1.1 | 3.6 |
| Tax revenues from agriculture (in billions of yuan) | 1.9 | 2.8 | 4.2 | 1.4 | 6.0 |

Notes: ^a Total product of society is the sum of gross output values in agriculture, industry, construction, transport, and commerce. Total product of society differs from the concept of gross national product (GNP) in two respects: (i) The former excludes income from services provided by non-material sectors such as public utilities, culture, education, public health, banking and insurance, while these sectors are included in the GNP; (ii) total product of society includes consumption of raw materials and power in the process of material production, whereas GNP excludes these intermediate inputs.

^b Since the 1950 estimate is not available, this figure is based on the 1952 estimate.

^c The average annual growth rate is calculated for the 1952-78 period.

Source: Computed from State Statistical Bureau, *Statistical Yearbook of China 1986*.

On the basis of the above analysis, the new reform program of 1978 has indeed contributed to increased agricultural production and higher income among farmers. As China is the world's populous country, sufficient food supply for its people has always been of paramount importance to

the Chinese government. Perhaps the major contribution of the new reforms was that farmers are motivated by the reward system to increase their work efforts, and thereby increased their labour productivity. The evidence thus suggests that the agricultural reforms have been successful in increasing the national income, thereby raising the living standard in China.

IV. Conclusions

This paper examines the massive agricultural reforms that have taken place in China since 1978. In particular, the study is focussed on two major instruments used by the government in agriculture: the production responsibility system and the agricultural price reform. The production responsibility system encourages farmers to exercise their own production and marketing decisions. This provides strong incentives among farmers for increased agricultural production and better farm management. The reform of farm price structure also increases the incomes of farmers who are free to sell their surplus products in the free market, thereby inducing them to improve farming techniques and productivity.

In sum, the agricultural reforms have been successful in increasing China's agricultural production and national income. It appears that the impressive performance in the agricultural sector is largely attributed to a combination of incentives to farmers and relaxation of state controls. If the Chinese government can maintain its current pace of agricultural reforms, China may be able to achieve its ambitious goal of being a developed country by the 21st century.

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