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China's Agricultural Restructuring and System Reform under Its Accession to the WTO*

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Abstract

This paper first introduces the economic reforms and structural adjustment in China's agriculture, and then examines the possible impact of China's accession to the WTO on China's agriculture. By reviewing the studies on the impact of WTO accession on China's agriculture, the paper summarises that both challenge and opportunity exist for China's agriculture after WTO accession. However, it argues that in the short term challenge is greater than opportunity, and the challenge is real and imminent, while opportunity can only be grasped through strenuous efforts. Therefore, the challenges facing China's agriculture after WTO accession are examined and relevant policy choices are proposed. (The original version of the paper is in Chinese. This is a translated English version).

This paper is intended to present my personal views on the impact of China's accession to the World Trade Organisation (WTO) on China's agriculture, and the corresponding agricultural policy adjustment and system reform.

1 Agricultural reform and structural adjustment

After twenty years' reform, China's agriculture has witnessed considerable progress. From 1978 to 1999, grain output increased from 305 million tons to 508 million tons.

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Agricultural value-added increased at an annual average growth rate of 4.8 percent, 2.75 percentage points higher than that achieved in the past 26 years before reform. Output of edible oil, meat, aquatic products and fruits has increased several times, and the structure of agricultural production has undergone profound changes. These achievements in agriculture are presented in Table 1 and Table 2.

Table 1 Growth rates of China's agriculture and staple agriculture products

	1952—1978	1978—1999
Value-added of Agriculture	1.85	4.80
Grain	2.41	2.47
Cotton	1.97	2.75
Edible Oil	0.84	7.95
Sugar	4.49	6.15
Tea	4.16	4.50
Fruit	3.88	11.31
Pork, Beef & Mutton	3.63	8.51
Aquatic Products	4.03	10.95

Source: State Statistical Bureau (2000), *Zhongguo Tongji Nianjian 2000* [China Statistical Yearbook 2000], China Statistical Press, Beijing, pp. 387-395.

Notes: Value-added of agriculture is calculated at constant prices; grain and other agricultural products are calculated in terms of outputs.

Table 2 Changes in the composition of agricultural structure (%)

Year	Crops	Forestry	Animal husbandry	Fishery
1978	80.0	3.4	15.0	1.6
1979	78.1	3.6	16.8	1.5
1980	75.6	4.2	18.4	1.7
1981	75.0	4.5	18.4	2.0
1982	75.1	4.4	18.4	2.1
1983	75.4	4.6	17.6	2.3
1984	74.1	5.0	18.3	2.6
1985	69.2	5.2	22.1	3.5
1986	69.1	5.0	21.8	4.1
1987	67.6	4.7	22.8	4.8
1988	62.5	4.7	27.3	5.5
1989	62.8	4.4	27.6	5.3
1990	64.7	4.3	25.7	5.4
1991	63.1	4.5	26.5	5.9
1992	61.5	4.7	27.1	6.8
1993	60.1	4.5	27.4	8.0
1994	58.2	3.9	29.7	8.2
1995	58.4	3.5	29.7	8.4
1996	57.8	3.3	30.2	8.6
1997	56.0	3.4	31.5	9.1
1998	56.2	3.4	30.8	9.6
1999	57.3	3.6	28.5	10.3

Source: State Statistical Bureau (2000), *Abstract of China Statistics*, 2000, p. 374.

Note: The shares are calculated at the current prices.

At the beginning of agricultural reform, about one third of the population in China's rural areas were underfed. However, since the mid 1980s, especially since the 1990s, China has bidden farewell to the absolute shortage of agricultural products, and the living standards of urban and rural residents have increased dramatically and have been well above the poverty line. In terms of agricultural product output per capita, as well as average calorie and nutrition in-take, China has reached or even surpassed the level of the world average (see Table 3).

Table 3 Per Capita Output of China's Staple Agricultural Products (unit: kg)

Year	Grain	Edible Oil	Meat	Egg	Aquatic Product	Sugar	Fruit
1949	209	4.8	4.1		0.9		
1952	288	7.4	6.0		3.0	13.35	4.29
1957	306	6.6	6.3		4.9	18.66	5.09
1965	272	5.1	7.7		4.2	21.50	4.53
1970	289	4.5	7.2		3.8	19.01	4.58
1978	319	5.5	9.0	1.0*	4.9	24.91	6.87
1980	327	7.9	11.5	2.6	4.6	29.67	6.92
1984	396	11.6	14.8	4.2	6.0		
1988	355	11.9	22.3	6.3	9.6	56.17	15.12
1990	390	14.1	25.0	6.9	10.8	63.55	16.51
1991	376	14.1	27.1	8.0	11.7	73.16	18.91
1992	378	14.0	29.3	8.7	13.3	75.61	20.95
1993	385	15.2	32.4	10.0	15.4	64.70	25.55
1994	371	16.6	37.5	12.3	17.9	61.63	29.36
1995	385	18.6	43.4	13.8	20.8	64.96	34.98
1996	412	18.1	48.3	16.1	23.0	68.66	38.21
1997	398	17.5	50.2	17.3	29.1	76.31	41.37
1998	410	18.5	45.9	16.2	31.3	78.82	43.90
1999	406	20.8	47.5		32.9	66.48	49.76

Source: State Statistical Bureau (2000), *Zhongguo Tongji Nianjiang 2000* [China Statistical Yearbook 2000], China Statistical Press, Beijing, p. 36.

Note: *Estimates of the experts of Ministry of Agriculture.

Before the reform, farmers' income increased at a very slow pace. After the reform, farmers' per capita net income increased from 133.57 yuan in 1978 to 2210.34 yuan in 1999 at an average annual growth rate of 7.69 percent (at constant prices). In 1978, there were 150 million people living under the poverty line in rural areas, representing about 26 percent of the rural population. By the end of 1999, this figure had dropped to 34 million, and the poverty-stricken population had dropped to 3.9 percent in the total rural population.

The achievements of China's agriculture over the past two decades have been mainly benefited from the market-oriented reform. The establishment and popularisation of Household Responsibility System (HRS) have made farmers independent operators, laying a micro-foundation for the market economic system. The development of agricultural commercialisation, including farm products and production factors, has given price regulation a leading role in agricultural economy. International trade of agricultural products has increased synchronously with agricultural production, and China has maintained a trade surplus. In 1998, the export of China's agricultural products totalled US\$26.2 billion, an increase of 150 percent over that of 1980 with an annual average growth rate of 5.2 percent. Bilateral and multilateral agricultural international cooperation have further developed with continuous strengthening in technical exchanges. In terms of foreign investment, China's agriculture also enjoys good prospects. Over the past 20 years, the contracted value of foreign investment in China's agricultural sector has totalled US\$769.21 billion.

At present, China's agriculture is in a critical period. Because of the rapid development over the past 20 years, especially the successive 5 years' good harvests in the late 1990s, the relationship between supply and demand of agricultural products in China has entered into a relatively balanced stage, a shift from the long-term shortage in the past.

The surplus of agricultural products has caused a series of problems, such as difficulties in sales, decline in prices and slowing-down in the growth of farmers' income. These problems have debunked the deep-rooted contradictions encountered by China's agriculture. Two problems exist. The first relates to quality and efficiency.

The current surplus occurs at a low-income level, which, to a great extent, is a structural problem. On the one hand, staple agricultural products could not be sold, while on the other hand, high quality, special and processed agricultural products are in short supply. This implies that the target of China's agricultural growth must shift from focusing on quantity increase to focusing on improving quality and efficiency. The second is that the growth of agricultural labour productivity is slow. Currently, the share of agriculture in China's GDP has dropped to 18.7 percent, while the share of agriculture labour force remains as high as 50 percent.

Under such circumstances, the Chinese government has recently made the decision to conduct strategic adjustment in agriculture. The direction and objective of such adjustment are to improve the quality and efficiency of agricultural production by shifting China's agriculture from focusing on the pure pursuit of quantity increase to an overall improvement in the quality of agricultural products. Measures of the adjustment are: firstly, to implement "seed projects" to optimise the mix of crops, animal by-products and aquatic products; secondly, to develop agricultural products processing industry and increase value-added of agricultural products; thirdly, to adjust the production pattern among regions and bring the regional comparative advantage into full play; fourthly, to accelerate the migration of rural surplus labour force to the secondary and the tertiary sectors by developing township enterprises and towns. It can be foreseen that, with the implementation of the strategic adjustment of agricultural structure, China's agricultural development will enter a new stage.

2 The impact of WTO accession on China's agriculture

Since China reached the agreements with the U.S. and European Union in November 1999 and May 2000 respectively on China's accession to the WTO, the negotiation for China's WTO accession has accelerated. So far, since the negotiation on bilateral market access for China's WTO accession basically has concluded, the work is now at the final stage of drafting the WTO Working Party's report and reviewing many legal documents.

Agriculture is an important field in relation to the negotiation on China's accession to the WTO. According to the commitment in market access negotiations, China will carry out necessary adjustments and reform of the border protection level and import administration measures for agricultural products. The main items are as follows.

1. Tariff concession on agricultural products: China has committed that the average tariff rates on agricultural products will be reduced from current 21.2 percent to 17 percent in 2004.
2. Elimination of non-tariff measures: China has committed to eliminate all non-tariff measures on wheat, rice, corn, cotton, soybean oil, sugar, wool and other important agricultural products, to implement a Tariff Rate Quota (TRQ) system.

China is a developing country dominated by an agricultural population. Accession to the WTO means that China's agriculture will be placed under the multilateral trade mechanism, to be integrated with the world trading system and to face directly fierce competition in international agricultural products markets. For China's agriculture, this is undoubtedly a big change which will provide new opportunities and pose great challenges.

The impact of WTO accession on China's agriculture is an important issue that calls for careful study and has significance in policy. An overall analysis, especially quantitative analysis, is needed on China's agricultural comparative advantage and potential competitiveness. Some domestic and overseas experts and scholars have done several empirical studies and proposed their viewpoints and conclusions. For example, China Agricultural University (1998), Zhong Funing (1999), Huang Jikun (2000), Chen Guoqiang (2000), and OECD (2000). Although methodologies, parameters and data sources are different in their studies, and specific results also vary, sometimes even considerably, their conclusions are basically consistent. Summarising their studies, we can make the following basic judgments.

1. By the mid 1990s, the production of staple agricultural products such as corn, wheat, *Indica* rice, cotton and rapeseed lost comparative advantage. The

opportunity cost of domestic resources for producing these products is higher than that in the international market. Upon China's accession to the WTO, the domestic production of these products would face the greatest shock. Corn, wheat and other agricultural products are land-intensive. The efficiency of the production of these agricultural products depends mainly on scale economies and on the substitution of labour by machinery. The main reason for losing comparative advantage of these agricultural products is the increase in production costs. Limited by the size of arable land, labour costs for unit agricultural product are excessively high. In addition, the average size of arable land of rural household is small, only 0.4 hectare, far less than that in Europe and the U.S., which causes China's labour costs per unit of agricultural output to be far higher than those in agricultural product exporting countries in Europe and North America, even when the physical costs for unit agricultural product are the same. For instance, compared with the U.S. and Canada in terms of the production cost composition of corn, wheat and rapeseed, even though the machinery cost of the U.S. and Canada is twice as high as that of China, China's production cost is still 20 percent higher because China's unit labour costs are 4 to 6 times of those of the U.S. and Canada. It can be seen that even though China has abundant labour resources, this advantage, limited by scale of operation, has become a disadvantage in arable land-intensive products.

2. China has certain comparative advantage in the production of rice (except for *Indica* rice), sorghum, millet, sugar cane, peanuts and tobacco, as well as most animal husbandry and horticulture products. The domestic production of these items has relatively high social net gains. There are some reasons behind the competitiveness of China in these products. First, the international market prices for these products are far higher than those in China's domestic markets. Second, these products are labour-intensive products which are unfavourable for mechanisation. For example, mechanised operation is difficult to realise for vegetables and animal by-products, thus making it favourable for China's advantage of low labour costs to fully play its role. A typical example is pig production. Currently, rural household raising of pigs is the main method in

China's pig production, which can take advantage of the replacement of feed costs by labour. However, it should also be noted that the domestic production of these products is still plagued by quality problems. Therefore, the transformation of potential comparative advantage to real export advantage is constrained.

3. Reforming the current protection policy will make the respective comparative advantage of the above-mentioned two types of agricultural products more remarkable. In general, the effective level of protection level of China's agricultural products is still a negative value, even though the level has increased since 1990s. The protection levels are different for different agricultural products. Generally speaking, the protection level is low for agricultural products which have a comparative advantage, while the protection level is high for agricultural products which have a comparative disadvantage (Jikun Hung and Chen Chunlai, 1999). In terms of trade pattern, the import and export of agricultural products in China are basically consistent with the principle of comparative advantage, mainly importing land-intensive products and exporting labour-intensive products. But there is a marked tendency of import substitution in the trade policy regime. Therefore, upon accession to the WTO, if protection policy is adjusted according to comparative advantage, the comparative advantage of different agricultural products will drive trade flows and production patterns.
4. The regional comparative advantage of domestic agricultural production has not yet been brought into full play. The production conditions differ greatly in different regions in China. The production cost of the same product in different regions differs greatly from that of the national average. On the one hand, with respect to a product with comparative advantage in a national basis, its cost in a given region might be higher than that in the international market. On the other hand, with respect to a product whose resources cost in domestic production is higher than that in the international market, it cannot be ruled out that a region can maintain production as compared in an open market. This is especially important to China. As the regional pattern of China's agricultural

production is very irrational at present, the domestic resources cost of a given product calculated under this circumstance is actually higher than the actual opportunity cost.

5. In conclusion, most researchers think that both challenge and opportunity exist for China's agriculture in terms of WTO accession, and in the short term, challenge is greater than opportunity. As a member after accession to the WTO, China will be able to directly participate in the international multiple trade negotiations for agricultural products and the formulation of rules so as to gain a more stable environment for its agricultural products trade, and for the expansion of export of advantageous agricultural products and the import of funds, technology and modern managerial skills at a larger scale. It is also favourable to utilise international market and resources to expand the space for structural adjustment of domestic agriculture and speed up marketisation. On the other hand, the challenge and pressure are also formidable, especially staple agricultural products will face great pressure from international competition. Domestic production will be partially substituted by imports, which will deprive agriculture of considerable employment opportunities. Accession to the WTO will place greater pressure on rural employment.

In a word, the challenge is real and imminent, while opportunity can only be grasped through strenuous efforts. So, the actual impact of accession to the WTO on China's agriculture is ultimately conditional upon the adjustment and reform of China's domestic policy.

3 Policy choices of China's agriculture in face of internationalisation

Whether seen from domestic situation or from the challenges and opportunities upon accession to the WTO, it is required that China's agriculture speeds up in structural adjustment and market economic reform.

3.1 Challenges

In order for China's agriculture to participate in international competition and share the benefits from international trade, China should adjust its structure of domestic agricultural production under the principle of comparative advantage.

First, China should actively develop the agricultural products to which it has a comparative advantage, such as animal husbandry products, aquatic products, horticultural products, and special agricultural product, and improve the quality and increase the share of these products in export markets. At the same time, the production of those agricultural products to which China has a comparative disadvantage should be reduced.

Second, China should actively develop agricultural products processing industry, especially those of the high value-added processing. The competition in the international market is not in terms of a single agricultural product, but of competition of the entire agricultural system incorporating production, processing and consumption. The growth of agricultural products processing industry would be a strong impetus to promote the specialisation and standardisation of China's agricultural products and to improve the overall quality of agriculture products.

Third, China should adjust and optimise the regional pattern of agricultural production. In the eastern coastal area, the production of grain and other agricultural products in which the region has no comparative advantage should be reduced while high value-added and export-oriented agricultural products should be developed. In the western area, land for farming should be returned to forestry and grassland to improve the ecological environment with emphasis on the production of special agricultural products. In the central area where comparative advantage remains for staple agricultural products, production costs should be reduced on the basis of stabilising productive capacity. The potential to bring regional comparative advantage into full play is enormous, subject to the improvement of the conditions for agricultural product marketing between regions.

Fourth, China should accelerate the migration of surplus agricultural labour from the farming sector to the secondary and the tertiary sectors and from the rural areas to cities and towns. Among the current agricultural labour force of 350 million, 150 million are estimated as the surplus. Low agricultural productivity is one of the main causes that restrains the competitiveness of China's agriculture. China can speed up urbanisation which will be a major force to accelerate the migration of agricultural labour. Obviously, the adjustment in the production, trade and employment structure is going in the same direction as the implementation of current domestic agricultural policy. Therefore, China's accession to the WTO will greatly promote the strategic adjustment of its agricultural structure.

3.2 Policy choices

Compared with the adjustment of the agricultural production structure, policy adjustment and system reform are a more onerous task, as it not only includes the adjustment of domestic policy by applying the WTO rules, but also includes system innovation required by improving agricultural benefits on the basis of small-scale household management. The following major points should be included.

First, according to WTO rules, domestic laws and regulations on trade need to be revised. The rules centre on market access, fair competition and the method of support to agriculture. Up to now, there are a lot of laws and regulations on agriculture enacted by China's NPC (National People's Congress) and the State Council, by government departments and local NPCs, not to mention the numerous regulatory resolutions. Relevant laws and regulations should be rectified and revised in accordance with relevant requirement of WTO's agriculture agreement so as to correspond to domestic reform and be consistent with international multiple trade mechanism.

Second, the proportion of the support level of China's agricultural green-box policy in the total agricultural product output value is very small, far lower than that of the developed countries such as the U.S., European Union and Japan. On average, the subsidy level of amber-box policy is a negative value without any obligation of concession. So, in general, there is still room for China to take agricultural support.

Yet on the other hand, the emphasis and method of support policy need to be adjusted, and a stable and normal support policy mechanism should be established. With respect to emphasis of support policy, the first is the construction of agricultural infrastructure, agricultural scientific research, promotion of science and technology, quality standard and information service; the second is the establishment and improvement of agricultural safeguard mechanism; the third is domestic support for structural adjustment; and the fourth is the improvement of policy regarding agricultural ecological environment. To this end, the principle of public finance should be adhered to so as to adjust the structure and direction of financial expenditure in agriculture. The current price support method should be reformed to switch subsidy from the marketing field to the production field. The rural tax system should be reformed to implement a light tax policy.

Third, currently China's agriculture is confronted with the division of responsibilities among the departments for production, processing, marketing, domestic trade and foreign trade. Its development is also distorted by irrational personnel and financial relationship between the central government and local governments. This management system is not compatible with the requirement of the participation of China's agriculture in economic globalisation process. The experience of other countries should be drawn on to gradually establish an integrated agricultural management system that adapts to the requirement of agricultural globalisation. Since 1978, a new round of reform in China's governmental institutions has been initiated, but the reform needs to be advanced and improved.

Fourth, industrialised management of agriculture refers to the management system that establishes agricultural bases with enterprises involved in agricultural product processing, sales or technical service as leading force and lead farmers in the agricultural production bases to embark on specialized production of agricultural products. Since 1990, industrialized management of agriculture has witnessed extensive development in China. As proved by practice, this type of management can effectively solve the linkage problem between agricultural households of small-scale operation and domestic and foreign big markets, increase the value-added of agriculture by elongating the industrial chain, and improve the management efficiency

of agricultural households through return of profits. It is helpful for China to adopt advanced technology, equipment and management and improve its agricultural competitiveness. This operation method is based on Household Responsibility System. Agricultural households are still the independent operators, but they form communities of common interest with enterprises and companies through this type of management. At the same time, China is now formulating a land contracting law. Adapting to the trend of agricultural labourers' migration to the secondary and the tertiary sectors, this law encourages the exchange of the using right of arable land among farmers so as to expand the land scale and increase agricultural productivity.

Fifth, currently most agricultural products have been liberalised, but the development of market system falls behind. So, the nationwide wholesale market system for agricultural products, including specialised wholesale markets connected to the central wholesale market system for agricultural products, should be gradually established with emphasis on the construction of wholesale markets in the place of origin. Compared with market hardware construction, the formulation of market rules is more important. Monopoly on certain products should be changed gradually so as to encourage more operating subjects to enter into market, thus promoting market competition and regulating competitive behaviours. Grain marketing system also needs further reform. The promotion of domestic market reform must adapt to the requirement of globalisation process of agriculture. These two aspects are complementary and interactive.

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