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# Factors Influencing Price of Agricultural Products and Stability Countermeasures

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**Abstract** Factors leading to rise of prices of agricultural products mainly include tension of supply-demand relationship, promotion of production cost and circulation cost, and speculation of Refugee Capital (Hot Money). Factors leading to low price and difficult sales of agricultural products mainly include asymmetry of supply-demand information, lack of risk management tools for prices of agricultural products and decentralized and small-scaled operation of farmers. On the basis of these factors, this paper presents following countermeasures and suggestions for stabilizing prices of agricultural products; firstly, building long-effect mechanism for production and sales of agricultural products; secondly, expand the production and increase supply of agricultural products; thirdly, control the rising range of production cost for agricultural products; fourthly, enhance organization level of farmers; fifthly, promote innovation and development of risk management tools for prices of agricultural products.

**Key words** Prices of agricultural products, Long-effect mechanism of production and sales, Information

Since 2011, the Consumer Price Index (CPI) has been rising, with amount of increase up to 6% compared with the same period of the last year. The amount of increase in agricultural products exceeds that of general consumer price. Consequently, the basic living expenses of residents rise continually. However, there are also problems of low price and difficult sales of some vegetables and fruits. Although the yield of agricultural products is increased, the price of agricultural products drops. Such problem of "farmers suffered from low price of grain" greatly influences increase of farmers' income. This shows that the stability of agricultural products not only affects farmers' income level and enthusiasm for agricultural production, but also has a direct bearing on the quality of life of urban and rural residents. The fluctuation in prices of agricultural products increases the uncertainty of farmers' income and the difficulty of production decision. In view of these, I analyze major factors influencing the fluctuation in prices of agricultural products and put forward some countermeasures and suggestions for stabilizing prices of agricultural products.

## 1 Major factors leading to rise of prices of agricultural products

**1.1 Tension of supply-demand relationship** Along with the population growth, constant improvement of people's living standard, as well as development of the processing industry with agricultural products as raw materials, the demand for agricultural products also rises. Nevertheless, due to reduction of such factors of agricultural production as the sown area of crops and the number of people engaged in agriculture, together with influences of such natural calamities as drought and flood, as well as plant diseases and insect pests, the supply of agricultural products falls. Thus, the tension of supply-demand

relationship becomes a basic factor contributing to the rise in prices of agricultural products. Since agricultural products are basic necessities of life, the price elasticity of demand is small. Even though prices of agricultural products rise, the demand for agricultural products is difficult to decline, which in turn drives the rise in prices of agricultural products.

**1.2 Promotion of production cost** Rise in such production factors as the land, labor force, and other means of agricultural production directly leads to the growth of production cost for agricultural products. In recent years, the price of land rental constantly rises. Besides, since migrant workers' income has achieved great growth, the payment for agricultural laborers should be raised accordingly. At present, the dependence of agricultural production on means of production gradually increases, and the expenses for means of agricultural production have become major parts of costs for agricultural products<sup>[1]</sup>. The price of means of agricultural production is hard to drop because prices of such means of agricultural production as the seed, pesticide, fertilizer, and agricultural machinery constantly rise. What's worse, the long-term existence of the "energy shortage" problem makes it difficult to reduce the price of means of agricultural production.

**1.3 Promotion of circulation cost** Before reaching hands of consumers, agricultural products need experiencing many sections, including the production, purchase, transport, wholesale and retail. In these sections, the price of agricultural products will be lifted due to such circulation costs, as packing charges, cost of loading and unloading, cost of packing materials, weighing charges, freight charges, as well as rental charges of stand. Take the cucurbita pepo of Wuming County of Guangxi Province for example, the circulation cost from Wuming County to Xi'an is over 0.8 yuan/kg, including 0.06 yuan/kg for packaging, loading and unloading charges, 0.04 yuan/kg for weighing charges, 0.06 yuan/kg for transaction cost, 0.04 yuan/kg for packing materials, 0.6 yuan/kg for freight charges, without

counting rental charges of stand and normal transport losses<sup>[2]</sup>.

**1.4 Speculation of Refugee Capital (Hot Money)** Such agricultural products as garlic, ginger, and mung bean are easy to store, massive capital may control supply of goods in the purchase process, consequently leading to abnormal rise of prices of these products. In addition to the rumor about "garlic treating colds and flu (influenza)" and "mung bean treating many diseases", the demand for these agricultural products rises sharply. Therefore, the speculation of Refugee Capital (Hot Money) promotes rise of prices of agricultural products.

Furthermore, rise of prices of agricultural products is also influenced by frequent occurrence of natural calamities in other large countries of agricultural product, as well as rise of price of international commodities.

## 2 Major factors leading to low price and difficult sales of agricultural products

**2.1 Asymmetry of supply-demand information** The problem of information asymmetry is common in market economy. This problem causes that neither the producer nor the consumer can correctly and timely obtain information, which in turn deteriorates the fluctuation of price. Due to serious information asymmetry between farmers and market, farmers fail to promptly respond to market demand. Generally, they decide planting according to supply-demand information of the last year. Thus, the problem of "blindly planting following others" and rational individuals may lead to non-rational collective. Take the garlic planting in Pizhou as an example, due to unprecedented high price of garlic in 2010, planting area greatly increases in Pizhou. However, sales channel is not opened, leading to low price and difficult sales of garlic in early summer of 2011. Asymmetry of supply-demand information leads to dull sales of agricultural products, so it is the most important factor influencing fluctuation in prices of agricultural products.

**2.2 Lack of risk management tools for prices of agricultural products** At present, China lacks such tools for management of price risk as forwards, futures and options of agricultural products. China has introduced some futures transactions of agricultural products, but the types are limited. In addition to farmers' low cognition degree to futures of agricultural products, it is difficult for farmer households with decentralized management to directly participate in futures transaction<sup>[3]</sup>.

**2.3 Decentralized and small-scaled operation of farmer households** With the conflict of "small farmer households" and "big market" becoming prominent, it is difficult for small decentralized farmer households to respond to ever-changing big market. Farmers have nothing to do but accept prices of agricultural products, and decentralized farmers lack ability of influencing prices of agricultural products.

## 3 Countermeasures and suggestions for stabilizing prices of agricultural products

**3.1 Building long-effect mechanism for production and sales of agricultural products** The key to stabilizing prices

of agricultural products lies in building long-effect mechanism for production and sales of agricultural products. Through such mechanism, it is expected to effectively respond to sharp fluctuation in prices of agricultural products, stabilize the supply-demand relationship, and safeguard benefits of residents and farmers. When building the long-effect mechanism for production and sales of agricultural products, it is required to consider following aspects.

**3.1.1** It is proposed to establish smooth information platform and determine production on the basis of demand. Through construction of multi-level information network for agricultural products, we should build smooth information platform, to timely transmit demand information of agricultural products, guide agricultural production, develop made-to-order farming, and orient towards market demands. Besides, it is recommended to guide agricultural producers to spontaneously adjust production scale and type, reduce blind agricultural production, and reduce fluctuation in supply of agricultural products. This is not only favorable to tackling problem of low price and dull sales of agricultural products, but also helpful to controlling rise of prices of agricultural products. Thus, building the smooth information platform is the foundation for building long-effect mechanism for production and sales of agricultural products and stabilizing prices of agricultural products.

The construction of information network for agricultural products is the foundation, while the key is to promptly transmit demand information of agricultural products to farmers. At present, network infrastructure has not been popularized in rural areas and few farmer households use network, so it is required to transmit demand information of agricultural products to farmers through improving the organization level of farmers. In this situation, it is proposed to bring into play guiding, adjusting and controlling functions of government at all levels, exploit sales channel and guide farmers to produce agricultural products according to market demand through collecting and providing product demand information in many ways. Besides, it is required to avoid only paying attention to large-scale operation and building large production base, but neglecting expansion of sales channels.

**3.1.2** It is proposed to reduce circulation cost and keep smooth circulation channel. This is an important measure to build the long-effect mechanism for production and sales of agricultural products and stabilize prices of agricultural products. Specifically, we can take various measures to reduce costs of agricultural products in the course of circulation. In addition, we can strengthen construction of mechanism for connecting benefits of agricultural product producers, processors and circulation persons and sellers. At the same of controlling rise in prices of agricultural products, it is required to guide the income from price rise to flow towards agricultural producers.

On the basis of pilot project of "Connecting Agriculture with Supermarkets" jointly launched by the Ministry of Commerce and the Ministry of Agriculture, it is recommended to energetically popularize the model of "Connecting Agriculture with Supermarkets", develop direct sales of agricultural products, ex-

plore many more sales models, to reduce sales cost of agricultural products and better stabilize prices of agricultural products. Furthermore, it is required to guide and help farmers to directly sell agricultural products in cities.

**3.1.3** It is proposed to perfect supporting policies for prices of agricultural products. On the basis of implementing supporting policies for prices of agricultural products, we need establish the system of minimum purchase prices for staple agricultural products in combination with such factors as cost of agricultural products and proper profits. This is favorable to correcting deviation of market orientation and stabilizing supply-demand relationship and prices of agricultural products.

**3.1.4** It is proposed to improve reserve and logistics system of agricultural products. If it is difficult to sell agricultural products, we can temporarily store them, and put them on market when there is short supply of them, to stabilize prices of agricultural products and avoid sharp fluctuation in supply-demand relationship of agricultural products.

**3.1.5** It is proposed to strengthen supervision and take strong measures against actions of hoarding and profiteering that upset the market. Government at all levels should establish the rapid response mechanism to respond to abnormal fluctuation in prices of agricultural products, strengthen supervision, crack down on price violations, and prevent the bull operation of agricultural products. It is required to firmly strike at actions of hoarding and profiteering, bull operation, and speculation of agricultural products.

**3.2 Expand the production and increase supply of agricultural products** To respond to increasing growth of demands for agricultural products and alleviate pressure on price rise of agricultural products, we should take various measures to effectively expand production of agricultural products, increase supply of agricultural products, and raise both yield and quality of agricultural products.

**3.2.1** We should strictly implement the strictest cultivated land protection system. According to *Comprehensive Plan for National Land Use (2006–2020)* approved by the State Council, it is expected to realize following objectives of land use within the planned period: keep the red line 120 million  $\text{hm}^2$  cultivated land, and the protection area of cultivated land is 121.2 million  $\text{hm}^2$  and 120.3333 million  $\text{hm}^2$  respectively in 2010 and 2020. Within the planned period, it is expected to ensure that the basic farmland area (104 million  $\text{hm}^2$ ) and the quality will not be reduced<sup>[4]</sup>. We can raise the efficiency of cultivated land use through subcontracting, transfer, buying shares, leasing, and exchange, to promote land circulation. This is favorable to expansion of large-scale agricultural production and increase of supply of agricultural products.

**3.2.2** We should increase scientific research inputs in agriculture and enhance popularization of agricultural technologies. On the basis of ensuring stability of cultivated land area, it is required to increase inputs in agricultural science and technology, popularize agricultural technology, and lift both the yield and quality of agricultural products through raising the yield and quality of per unit area.

**3.2.3** We should strengthen the credit orientation and structural adjustment. At the same time of controlling monetary circulation aggregates and reducing credit inputs in overheated industries, we should increase credit inputs in sections of agricultural production, reserve and circulation. For example, we should increase credit inputs in infrastructure construction of rural areas. In particular, it is required to enhance policy farming support inputs, to support development of agricultural industrialization, specialization and intensification<sup>[5]</sup>, finally to provide adequate fund guarantee for agricultural production.

**3.2.4** We must strive to carry out rural infrastructure construction, improve the system of preventing drought, waterlogging, plant diseases and insect pests, and livestock pestilence. Besides, it is proposed to increase financial support for construction of water conservancy works and constantly improve functions of water conservancy facilities. Apart from enhancing maintenance and improvement of original irrigation projects, it is also required to develop new water conservancy projects in line with new features of droughts and waterlogging disasters in recent years.

**3.3 Control the rising range of production costs for agricultural products** There is a rigid rising trend of such agricultural production costs as land lease charge and labor payment, so it is required to properly control their rise, to avoid the problem of excessive rise of prices of agricultural products but reduction of farmers' income. What's worse, it is difficult to effectively lower costs of means of agricultural production. If implementing the ceiling price policy, it may lead to reduction in supply of means of agricultural production, and consequently intensify out-of-balance of means of agricultural production for agricultural products. Therefore, we should attach most importance to subsidy policy. In other words, we should provide certain production subsidy and reduction or exemption of taxes for those enterprises producing means of agricultural production, reduce production and operation costs of enterprises, and provide certain subsidy for farmers' purchasing means of agricultural production.

**3.4 Enhance organization level of farmers** We should gradually guide farmers to carry out new cooperation and union on the basis of household contract responsibility system. It is expected to establish rural market intermediary organizations, such as agricultural trade association, farmers' cooperative organizations, etc., to really represent farmers' benefit. Through enhancing organization level of farmers, it is possible to effectively collect information of demand of agricultural products, organize production, keep smooth sales channel, and utilize risk management tool for prices of agricultural products. In addition, it is expected to boost farmers' market competitive power, raise discourse right of farmers in decision of prices of agricultural products. These are favorable to solving conflict between decentralized operation of farmers and large market, and enhancing farmers' ability of responding to fluctuation in prices of agricultural products.

**3.5 Promote innovation and development of risk management tools for prices of agricultural products** Innovation

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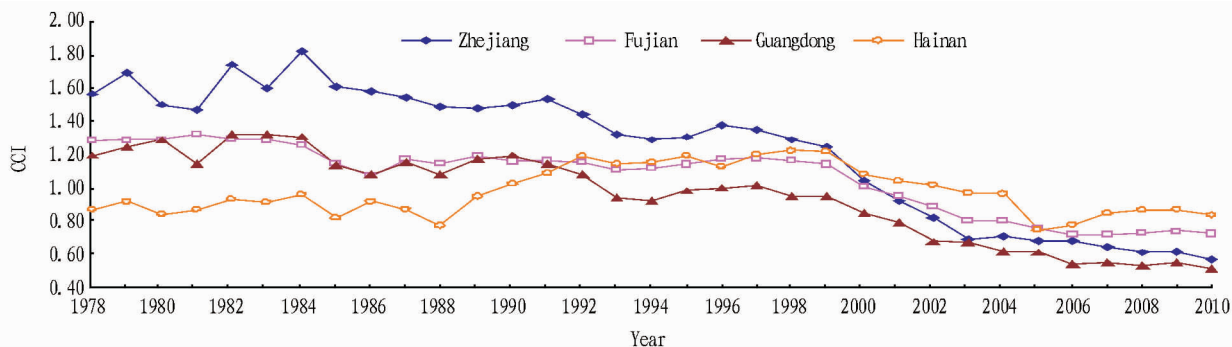


Fig. 4 Changes of the CCI in Zhejiang, Fujian, Guangdong and Hainan Provinces in 1978 to 2010

In the first place, for the whole country, from 1949 to 2010, the CCI takes on a rising trend. It once reached the well-off level in 1996 to 1999. It reached the well-off level again in 2010, but there is a still long way to get to the richness level;

Next, the CCI in those main producing regions is relatively high and reached the well-off level in 2010, and some provinces even get to the richness level. In main sales regions of grain, the entire CCI is low and has an obvious trend of decline, especially in Guangdong, Zhejiang and Fujian provinces. In grain balancing regions, the CCI is generally low, and most provinces are still at subsistence level.

**3.2 Discussions** Researches have indicated that the Cropland Contribution Index model can simply and rapidly reflect the relation between regional cropland, grain and population. Since the total grain yield in a region is used, the importance of cropland to grain production is stressed. In addition, it stresses the importance in raising the per unit area yield and multiple crop index through increasing inputs. Furthermore, the use of simple evaluation methods makes calculation become simple and feasible. Thus, the CCI model can be applied as a method to rapidly find out regional cropland-grain-population relationship.

The scope of application of the CCI model is wide. It not only can be used in the scope of whole country, but also can be applied in a small administrative village. Nevertheless, since the CCI directly uses total grain yield in a region as a calculation factor, it is difficult to reflect the regional cropland-grain-population relationship for pastoral areas or fishing areas which have lower dependence on cropland.

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and development of risk management tools for prices of agricultural products can decentralize price risks of agricultural products. On the basis of drawing on advanced experience of foreign countries in risk management tools of prices of agricultural products, and in combination with China' actual situations, we should gradually perfect such tools for management of price risk as forwards, futures and options of agricultural products. Relevant departments should provide certain education and training, guide farmers to better utilize the price risk management tools, and prevent risk of fluctuation in prices of agricultural products through such management tools as forwards, futures and options of agricultural products.

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