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Evolution of Post-war Agricultural Support Policies in China's Taiwan

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Abstract This paper revised the key agricultural support policies in China's Taiwan after World War II, and examined the effects of policies on agricultural production and the farmers' income. The research results showed that the support policies had a positive effect on agriculture development and contributed to the accomplishment of industrialization. China's Mainland and Taiwan have similar agricultural production environment and share the same culture. Recommendations on agricultural support policy making in China's Mainland were proposed.

Key words Policy, Agricultural support, China's Taiwan, Mainland

1 Introduction

During World War II, China's Taiwan suffered destruction by the war and the national economy was damaged. After the Kuomintang retreated to Taiwan from the mainland China, there was an increasing need for food which deteriorated the weak agricultural situation. The priority aim of Taiwan's authority at that time was to recover the agricultural production by support policies. Then, with the process of industrialization, agriculture provided raw material, capital, labor and market to the industry. The main goal of the agricultural policies was to ensure that the agriculture production can meet the demand of industrialization. Taiwan accomplished the industrialization and was famous as one of the "four little tigers" in East Asia. After the industrialization, the aim of agriculture policies focused on ensuring the food security and promoting the food self-sufficiency rate. The success of industrialization in Taiwan not only ensured the fast growth of national economy, but also promoted Taiwan into developed country without being trapped into middle-income countries. China's Mainland is in the middle stage of industrialization, facing the challenge of finding new economy growth points. Mainland and Taiwan of China have similar agricultural production environment and share the same language and culture. Taiwan has already realized the modern agriculture and completed the process of industrialization. Studying and thoroughly understanding the evolution of agricultural support policies in Taiwan will help the Mainland China clarify the direction of agriculture development and well meet the upcoming challenges. It will assist the mainland China to realize the modern agriculture and the accomplishment of industrialization. The aim of this research is to understand the evolution of the agricultural support policies in China's Taiwan associated with the level of economic development after the Second World War, analyze the effects of the policies on the agricultural production and provide recommendations on policy making in the mainland China. Comparative analysis method and

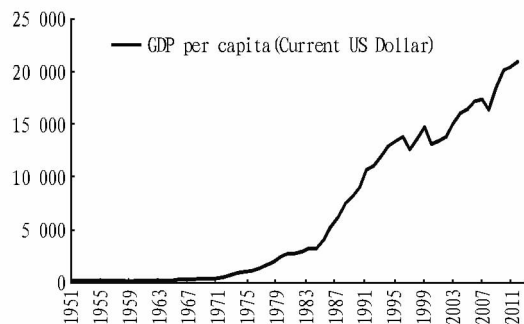
economic history analysis method are used in this research. Data are achieved from the bureaus of statistics in Taiwan's authority. In the next section, the economic background of agricultural support policies in Taiwan is stated first. Then, the main support policies are stated and analyzed based on the different stages of industrialization. Effects of the policies are examined in the next section and the paper proposes policy recommendations for the mainland China.

2 Background of ASPs in Taiwan

According to an empirical study of World Bank, developed countries come to support agriculture when GDP per capita reaches 1000 US dollars. Based on the fundamental theory of development economics, agriculture stays in a relative weak status compared to other sectors. Agriculture provides raw materials, capital, labor and market to the industry and in turn the industry has to support and nurture agriculture after the economy reaches the middle stage of industrialization. As shown in Fig. 1, GDP per capita in Taiwan kept a general growth trend after the Second World War. Particularly in the year around 1980, the export-oriented economic development model accelerated the growth of GDP per capita. In 1976, the GDP per capita in Taiwan reached 1151 US dollars. The massive agricultural support policies began from this point.

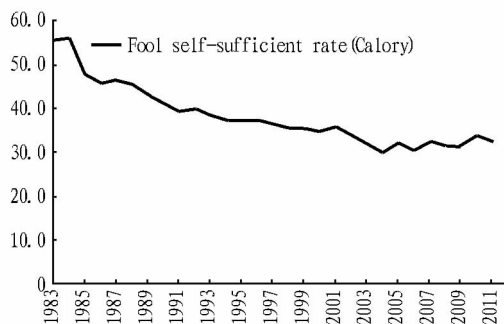
Although agricultural support policies have contributed to the production of agriculture, which has to be validated in the following sections, the food self-sufficiency rate is still declining in recent years. As shown in Fig. 2, the food self-sufficiency rate calculated based on calorie declined from more than 50% in 1983 to the lowest point of 30.2% in 2005. The food security was much challenged.

Thus, the aim of the agricultural support policies in Taiwan experienced a process of production recovery, supporting industrialization, and promoting food security. In the following section, these three phases of support policies are introduced and analyzed sequentially.



Data source: Bureau of Statistics of Taiwan.

Fig. 1 GDP per capita in Taiwan



Data source: Bureau of Statistics of Taiwan.

Fig. 2 Food self-sufficiency rate by calories

3 Main agricultural support policies

Along with the growth of the economy, agricultural support policies were proposed gradually. As discussed in the previous section, goals of support policies were various in difference stages of economic development.

3.1 Phase I: Recovery of agricultural production The first stage is from 1950 to 1960. Right after the World War II, national economy needed to recover to support ordinary life. Recovery of agriculture was not only for the purpose of food, but also for the urge demand of recovery for industry. In 1949, Taiwan authority started the land reform in rural areas. The land reform was conducted by capitalizing the land right of the landlords. Payments of land buying to the landlords were in the form of stock and shares in business. By this method, the farming land was distributed to the agricultural producers. Meanwhile, the original capital was gathered for industry.

3.1.1 Promoting the agricultural infrastructure. From 1953 to 1962, the investment in agricultural infrastructure occupied more than 20% or 100% of the total investment in the economy. The main parts of agricultural investment were repairing and recovering the agricultural infrastructure and irrigation systems. The investment improved the condition for agricultural production.

3.1.2 Promoting the agricultural technology. Although the capital for agriculture was limited right after the war, agricultural technology was still a significant part for investment. There were around 60 agricultural technology pilot stations established. These

research institutions assisted the improving seed refinery, use of fertilizer, anti-pest protection and planting technology in agricultural production. These technologies promoted the agricultural productivity in Taiwan.

3.1.3 Encouraging agro-product export. Processing and export of agro-product was a key part of Taiwan export, which gathered considerable scale capital for the industrialization. From 1952 to 1965, around 2/3 of the export was about agro-product. In this period, export policies were focused on encouraging planting, processing and exporting of agro-product. Different from the traditional export, the support policies introduced modern business pattern and used farm cooperation to guide the agricultural production based on the needs of international market. Besides, policies that benefit the exporters were proposed such as tax refund, tax elimination and *etc.*

3.2 Phase II: Supporting the completion of industrialization

From 1960 to 1970, this was the middle stage of industrialization in Taiwan. In this period, the policies balanced the development of agriculture and industry. However, in the process of implementation, the development of agriculture fell behind industry. However, agricultural support policy still ensured the production of agriculture.

3.2.1 Promoting the adjustment of agricultural production structure. Along with the growth of residents' income levels and the development of exports, the needs for fruits and animal products increased. Thus, the policy was adjusted to support investment in livestock, import of fine breeds and the development of livestock raising. Agricultural support policies in this stage were concentrated in converting from supporting single grain product to diverse agro-products.

3.2.2 Supporting agriculture from the finance. To support agricultural production, policies were launched in 1960s to reform and establish financial institutes to support agriculture. Bank for Farm Land, Cooperative Financial Fund and Bank for Farmers constituted the key financial institutes for agricultural finance. They provided capital and non-interest loan to the farmers.

3.2.3 Promoting the farm scales. To promote the farm scales, agricultural support policies in Taiwan provided low-interest loan to farmers. Meanwhile, farmers' cooperation was encouraged. There were cooperative operation, professional area, authorized operation, and other patterns of agricultural production to enlarge the farm scales.

3.2.4 Abolishing the agricultural discrimination policies. In 1969, the Outline for Agricultural Policies was launched. The Outline summarized the achievements and consequences of agricultural policies in the past years and announced abolishing discrimination policies to agriculture. In 1970 and 1971, there was huge reduction on fertilizer prices. In 1972, the international trade limits on exchange for fertilizer by grain and sugarcane were abolished. Besides, the educational tax for land was abandoned along with the rise of purchasing price for agro-product. In 1874, the protected purchasing price on grain was implemented.

3.2.5 Promoting the rural industry development. Since 1960s, agricultural support policies in Taiwan have focused on the rural development. The nation seized the opportunity of converting labor-intensive industry from developed countries to developing countries, and many labor-intensive industries were brought in. The introduced industry promoted the rural industry development and stimulated the rural economy.

3.3 Phase III: Promoting food self-sufficiency rate Since 1970s, Taiwan has moved to the post-industrialization period. Industry started to nurture agriculture. In this stage, industry had the ability to support agriculture with extra resources rather than obtaining the resources from the latter. Thus, policies that ensure the support to agriculture by industry were proposed.

3.3.1 Market price support. Since 1970s, most agro-products have faced the challenge of low price as the extra production volume. The rural economy was depressed. This situation promoted the authority to launch market price support to critical agro-product to increase the farmers' income. Various policies were made based on different agro-products, to ensure the agricultural production at a certain level. The policies of lowest protection prices were conducted on corn, soybean, sorghum, and milk. Policies of protection prices to ensure the farmers' income covered rice, grape, sugarcane and milk. Policies of protection prices to guarantee the export included banana, mushroom and lettuce. Administration prices were implemented to control the production volume on cigarettes. Besides, the direct purchasing policies were conducted on the agro-products. Government purchased the agro-products from farmers and distributed them to market. In this way, the benefit of the farmers can be guaranteed.

3.3.2 Developing precision agriculture. Taiwan proposed the agriculture upgrade and precision agriculture development policy in 1985. The content included garden agriculture, senior agricultural production, research and development on agricultural products and sightseeing agriculture. The aim was to promote agriculture to the level of sector adjustment and produce environment-friendly agriculture. In 1992, the agriculture committee proposed Plans for Agricultural production and sale cost reduction. From 1992 to 1997, the cost of agriculture was reduced by 20%.

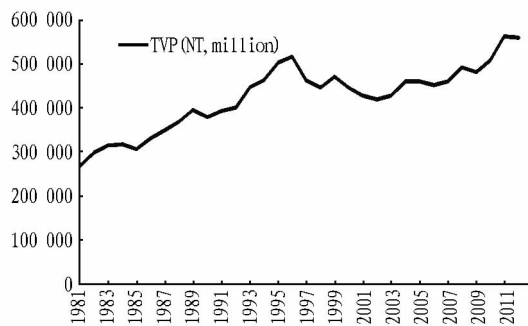
3.3.3 Promoting the farm scale. In 1982, Taiwan authority proposed the Second Land Reform. The core content was to promote collaborative production and accelerate the adjustment of farmland. Loan for purchasing land was distributed and training skills for non-agriculture were provided to farmers. In 1983, the agricultural ministry in Taiwan authority proposed Farmer Training Program. Professional farmers were selected and trained to cultivate agricultural producers with professional knowledge on technology and management.

4 Effects of agricultural support policies

Agricultural support policies in Taiwan generally achieved their goals. As defined by OECD, the aims of agricultural support policy are to increase the agricultural production and the farmers' in-

come. Thus, the effects of agricultural support policies in Taiwan are examined by these two aspects. The total value of agricultural production and the weight of farmers' income in non-farm household are chosen as the indicators.

4.1 Total value of agricultural production As shown in Fig. 3, the total value of agricultural production kept a general trend of increase. It started from the lowest point at 269 million NT in 1981 and reached the highest point at 561 million NT in 2011. There was fluctuation during these years, such as 1998, when the Asian Financial Crisis affected the export-oriented economy in Taiwan and resulted in the fall of the agricultural production values. Until 2002, the production was finally recovered and began the trend of increase again. However, in 2009, the impact of sub-loan crisis in 2008 reached Taiwan and drew back the growth of agricultural production. But in this time, the weight of agriculture in the national economy was much lower than the one in 1997 and the impact was limited. Although the value of agricultural production in 2012 shrank slightly compared to the one in 2011, it almost remained at the same level. The trend to total value of agricultural production indicates that the agricultural support policies in Taiwan after the World War II achieved their goals.

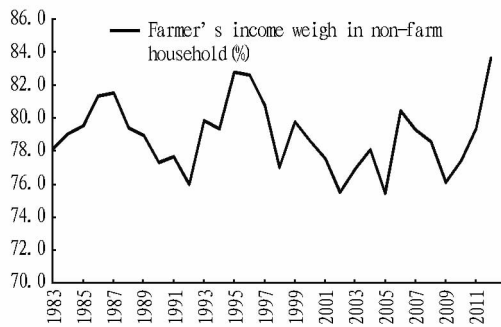


Data source: Bureau of Statistics of Taiwan.

Fig.3 Total value of agricultural production

4.2 Weight of farmers' income in non-agricultural household Farmers' income per household cannot be measured as a static indicator as the agricultural population changed dramatically along with the process of industrialization. Thus, the comparative indicator is more reasonable to reflect the relative value of farmers' income. As shown in Fig. 4, the weight of farmers' income in non-agricultural household fluctuated significantly from 1983 to 2012. The low points were related to economy recession period, such as the political unrest in east Asia in 1991, Asian financial crisis in 1997, dot bubble of internet in 2000, the disease of SARS in 2003 and sub-loan crisis in 2008. Due to the natural cycle of agricultural production, the farmers' income declined one year after these events. However, despite the fluctuation, the overall percent is above 75%. This is a high value compared to the other Asian countries. Moreover, from 2009, the weight of farmers' income on non-agricultural household soared up and reached 83.6% in 2012. The income gap between agriculture and non-agriculture shrank significantly. This also implied that the agricultural support

policy in Taiwan had a positive effect on promoting the farmers' income.



Data source: Bureau of Statistics of Taiwan.

Fig. 4 Weight of farmer's income in non-farm household

According to the OECD definition, the above two indicators showed that the agricultural support policies in Taiwan achieved their goals successfully. Agricultural support policies had a positive effect on agricultural production and farmers' income, and contributed to the accomplishment of industrialization.

5 Recommendations for policies in China's Mainland

As discussed in the previous section, China's Mainland and Taiwan share similar agriculture production environment and culture. Successful experience of agricultural support policies in Taiwan has a great value to the policy making in China.

5.1 Promoting agricultural support levels Agricultural support policies play a significant role in the development of agriculture and industrialization in Taiwan. GDP per capita in China's Mainland reached 1000 US dollars in 2003, and then 11 No. 1 central policies were all focused on agriculture. The era of agricultural support began in China's Mainland. Currently, Mainland China is in the middle stage of industrialization, which is equivalent to the phase II in Taiwan's agriculture development history. Generally, due to the large rural population, the average agricultural support to each producer is low. To ensure the agricultural production and to support the completion of industrialization, China should promote the level of support to agriculture under the maximum permission of the budget.

5.2 Enlarging the farm scales In phase II and phase III, agricultural support policies in Taiwan were all focused on enlarging the farm scales. Agriculture stays at a weak status in the national economy and needs to increase its productivity. Scale production is a critical method to solve this problem. Taiwan was based on

small scale household in agricultural production and the area of farming was increased by the two phases of agriculture support. China's Mainland is still in the situation of small scale farms, or family-based farms. Agricultural support policies in the Mainland should focus on the method to integrate fine resources for agricultural production, and make effort to enlarge the farm scales and increase the productivity. Then agriculture will be more competitive in the international market.

5.3 Using various methods to protect the benefit of farmers

Agricultural support policies in Taiwan use various methods to protect the benefit of farmers to guarantee their incentive for production, such as subsidies, agro-product price support, financial aid, agricultural technology support, farm cooperatives and *etc.* Similar methods exist in China's Mainland but the specific approaches were not mature. Pilot area can be conducted in mainland rural area by borrowing the methods from Taiwan. It is necessary to improve the whole system of agricultural support in China's Mainland and make it more mature to support different levels of agriculture.

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