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SIMULATIONS ON THE IMPACTS OF AGRICULTURAL POLICIES ON GRAIN SUPPLY AND DEMAND IN CHINA

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論文題目　：SIMULATIONS ON THE IMPACTS OF AGRICULTURAL POLICIES ON GRAIN SUPPLY AND DEMAND IN CHINA
中国における穀物需給政策のインパクト分析

区　　分　：甲

論　文　内　容　の　要　旨

Since China's development entered a new phase, large scale fund supports are available for agricultural development. Facing the decreasing food production situation, agricultural subsidy policies and grain price support policies have been implemented under the guideline of "offering more, taking less and loosening control" since 2003, aiming to mobilize farmers' enthusiasm for agricultural production, thus enabling grain production to rebound. The total amount of subsidies keep rapid increase annually and the grain minimum purchasing prices rise year by year. Those great support measures may show some influences not only on grain production but also on consumption, imports and exports. However, few studies have examined those impacts both on grain supply and demand, this study attempts to evaluate the effects of agricultural policies on grain price, production, consumption, import and export employing a simultaneous equations model.

In the model, grain production is determined by the area and yield response functions. Area is specified as a function of the area and producer price of previous year, subsidies and trend variable. Yield is specified as a function of the yield and producer price of previous year, subsidies and grain planted areas. Grain food and feed consumption are modeled as a function of grain market price, per capita income and meat price. Import is specified as a function of grain market price, production, consumption and the exchange rate of Chinese yuan to US dollar. Export is specified as a function of grain market price, production, consumption and the exchange rate of Chinese yuan to US dollar. For subsidy policy simulation, the producer price is specified as function of production costs, subsidies and a dummy variable. Note that the subsidies show positive influence on grain prices in recent years in China. While for minimum purchasing policy simulations, grain price is modeled as a function of minimum grain prices. For market clearance, Grain ending stocks are a residual of total supply minus total demand.

The simulation results suggest that: Agricultural subsidies positively impact grain production, and show a bigger influence on the next year's production than that of current year. Subsidies have negative influences on grain consumption but the influences are very tinny. For grain minimum purchasing price policy, increasing grain minimum purchasing price will promote the next year's grain production and only can reduce grain consumption in the current year. Subsidies can reduce imports and increase exports for rice and wheat; Subsidies may reduce corn imports and exports. Grain minimum purchasing prices can increase grain imports and reduce grain exports. Finally, both policies can result in a rise in grain ending stocks both in the current and the next year.

Generally, the influences from agricultural subsidy policies are rather small, while price support policy shows very significant impacts on grain supply and demand. Thus, continuing efforts should be made to design appropriate minimum purchasing prices for grains.