GRAIN PRODUCTION IN CHINA
Productivity Changes and Provincial Disparities, 1978-1990

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Abstract

This study investigates changes in the total factor productivity of grain production and their contribution to the growth of grain output between 1978 and 1990. It focuses on examining the factors responsible for changes in total factor productivity. Particular attention is devoted to exploring the causes of the disparities among provinces and respective grain crops. Relative provincial production efficiency in terms of resource utilisation is also examined.

The foundation underlying the whole study is the view that the growth of grain output is the result of increasing inputs and/or of improving total factor productivity. The analysis found that during the period studied, the rapid improvement of total factor productivity was an important source of the growth of grain output. However, this effect was only significant during the early years of the 1980s. After 1985, the growth of grain output was mainly the result of increasing inputs, while total factor productivity stagnated.

The study argues that the rapid improvement in total factor productivity during the early 1980s stemmed from the one-time gains of the implementation of the Household Responsibility System. This effect reached its limit by the mid 1980s. Further improvement of total factor productivity, therefore, has to rely on innovation and the application of new technology to extend the production frontier as well as on policies providing incentives for grain production. However, during the whole period studied, government policies with respect to agricultural investment, agricultural research, promotion of technology and marketing reforms were generally unfavorable to the improvement of total factor productivity of grain production. The increase in the grain price during the early 1980s had a positive effect on the improvement of total factor productivity. After 1985, the generally low relative prices of grain have also been responsible for the stagnation of total factor productivity during the second half of the 1980s. The effect of low relative prices, however, has been intensified by the small scale of household arable land, which constrains the improvement of labour productivity and therefore household incomes.

The variations in the growth of total factor productivity among provinces were significant, and were found to be closely related to the uneven development of the rural economy in different areas. The disparities in the growth pattern of total factor productivity among grain crops were associated with the demand for different grain crops and the level of central control over production.
The study found a close relationship between natural conditions and the level of production efficiency in different provinces for respective grain crops. Specialisation of grain production in the areas where natural conditions are favourable for a particular grain crop, therefore, is conducive to raising the efficiency of national resource utilisation. It is argued, however, that due to the central government's administrative intervention, provincial grain production is sometimes unable to pursue the path of the most efficient use of available resources. Entirely removing the central control over grain production is considered to be necessary for further improving total factor productivity and for a more efficient use of national resources.