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Journal of Asian Economics 16 (2005) 555–576

JOURNAL
OF
ASIAN ECONOMICS

Public infrastructure and productivity growth in Philippine agriculture, 1974–2000

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Received 6 August 2004; received in revised form 15 April 2005; accepted 20 April 2005

Abstract

We examine the impact of public infrastructure on the productivity performance of Philippine agriculture by applying a translog cost-based model to the regional agricultural data for years 1974–2000. From our results, public infrastructure reduces production cost, thereby enhancing productivity growth in Philippine agriculture. In terms of TFP decomposition, public infrastructure is noted to contribute significantly to productivity growth during the late 1970s, although its contribution is observed to be declining in the 1980s but recovering in the 1990s. The decline had been triggered by the reduced provision of public infrastructure. On the other hand, the improvement in its contribution in recent years has not helped reverse the overall decline of productivity growth. In this paper, we establish the importance of roads in terms of altering input demand and enhancing productivity in Philippine agriculture.

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JEL classification: O13; Q16; Q18

Keywords: Agricultural productivity; Translog cost function; FIML; Infrastructure; Philippines

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1. Introduction

Agricultural production in the Philippines stagnated in the 1980s, growing at an average of 1% per year. However, from 1990 to 1995, the growth rate increased to 1.4% but declined to 0.60% from 1996 to 2000 (Bureau of Agricultural Statistics, 2002; David, 1996). This decrease in agricultural production has been attributed to the observed declining productivity in the agricultural sector (Mundlak, Larson, & Butzer, 2002; Teruel & Kuroda, 2004). The loss of agricultural productivity should be of particular concern to the government if the country is to continue pursuing a policy of self-sufficiency in food and/or if the dependence of the mostly poor rural population on agriculture remains considerably high. Without new government initiatives to improve the productivity level in agriculture in a sustained manner, the country's effort to generate broad-based economic development and further reduce poverty will be undermined. It has been shown that the dismal performance of the agricultural sector correlates with or has deleterious effects on the overall growth of the Philippine economy (Balisacan, 2001; Pingali, Hossain, & Gerpacio, 1997). The question is, thus, what are the underlying causes of the poor performance of Philippine agriculture.

Declining agricultural productivity is a phenomenon observed in most developing countries. Some studies have clearly shown that the decline in productivity was observed even in developing countries where Green Revolution varieties of rice and wheat have been widely adopted (Fulginiti & Perrin, 1997; Hayami & Kikuchi, 2000). Most of the development specialists attributed this to monoculture production or intensive cropping systems. In the Philippines, David (2003) has argued that the poor agricultural performance has not been so much due to market factors, but rather to weaknesses in the policy and institutional frameworks governing the sector. Fulginiti and Perrin (1993, 1997) have specifically studied the effects of price discrimination and other related policies on agricultural productivity for 18 developing countries covering years 1961–1985. Empirical evidence shows that price-depressing policies reduce productivity with an elasticity of 0.13. They have pointed out that those countries with higher taxation show more regression than those with little or no taxation at all. Based on their analysis, Philippine agricultural productivity could have been increased by 1.3% through the elimination of direct government intervention (commodity price intervention) and 4.1% by the removal of indirect intervention (real exchange rate distortion and protection afforded to non-agricultural sector).

The declining agricultural productivity in the Philippines can also be an indication of deficiency in terms of support systems provided by the government for agricultural development. The low priority afforded by the government to agriculture has been very well documented (Balisacan, 1987; Bautista, 1987; Intal & Power, 1990). In this paper, we attempt to look at another viewpoint that may explain the loss of productivity in Philippine agriculture. The dismal productivity performance of the agricultural sector starting in the 1980s might have been exacerbated by the severe debt crisis during the decade as this encouraged cut in public spending on core infrastructure and other production-oriented government investments like research, irrigation and credit. In recent years, there has emerged a consensus among experts in the field that public investment policy has continued to be less favorable to the agricultural sector. This assertion can be indicated by the shift in

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