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Economic Efficiency of Feedlot Cattle Farms in Thailand

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Abstract

Cattle raising has been identified as 1 of 14 main products in Thai agriculture. Although, the growth rates of cattle farms and heads have been recognised, beef production in Thailand has not been sufficient for domestic consumption. Therefore, production improvement is the main concern of this sector.

The main purpose of this study is to measure and investigate factors affecting economic inefficiency of feedlot cattle farms in Thailand. Previous studies have investigated technical efficiency and its components at both the farm and aggregate levels in Thai agriculture, yet no study has measured and explained economic inefficiency of feedlot cattle production at the farm level in Thai agriculture. Valuable information on the economic efficiency is necessary for policy makers to enable them to choose the appropriate direction of development planning to sustain food security, improve resource allocation and, thus, reduce poverty in Thailand

To fulfil the above objective, the data envelopment analysis (DEA) approach and farm-level cross-sectional survey data of cattle farms in two provinces of the Southern Region in Thailand are used. In the second stage, in order to examine the effect of farm-specific socio-economic and management factors on farm efficiency, a Tobit regression is estimated where the level of inefficiency from DEA is expressed as a function of these factors. Through this, the likelihood of changes in economic inefficiency are explained by the above variables.

These empirical results suggest four important findings. First, the efficiency scores of some farms were considerably low. This implies that there is significant scope to increase efficiency levels in Thai cattle farms. Second, the results indicate that allocative inefficiency makes a greater contribution to economic inefficiency among farms. Third, the results also indicate that the Thai cattle farms over-utilised fertiliser, labour, capital and land inputs, while they under-utilised other inputs. Finally, there is a confirmation that farm size has influenced the allocative inefficiency of cattle farms in Thailand.

Keywords: Cattle farms, DEA, economic efficiency, food production, Thailand, Tobit regression