

The Comparative Analysis of Technical Efficiency of Jasmine Rice Production in Thailand Using Survey and Measurement Data

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Abstract: Thailand has been the top rice export country for over decades. Recently, high competition in trade has urged the country to raise quality and efficiency in rice production. Jasmine rice considered as the top quality rice in Thailand and the share of total rice export increase dramatically due to its favourable price. However, yield of Jasmine rice is relatively low as compared to modern varieties. The question being raised for Thai rice production is whether production efficiency of Jasmine rice yield could be increased and by what factors. Most studies in agricultural production models employ survey instead of measurement data. The measurement method of data gathering is considerably expensive and time consuming. This paper aims to compare the estimation results of stochastic production frontiers using two types of yield data, one from interviewing farmers and the other from measuring rice weight from sampled plots of each respective farm. Both types of data gathered from the same Jasmine rice producers in the three major production areas in the Upper North, Lower North and Northeast of Thailand in crop year 1999/2000. The stochastic production frontiers will be estimated using Maximum Likelihood Estimation. The findings reveal the production functions of the same set of sampled rice farmers. Except for the dependent variable (yield) other variables of respective farmers are identical in both frontier functions. The explanatory variables are production inputs and environmental conditions as well as biological risk, namely, chemical fertilizer use, labour force, chemicals use, irrigated land, severe drought problem, neck blast disease problem. The empirical result shows the estimates of model using measurement data are robust and different from those of survey data set. The latter are highly sensitive to model specification. Thus economists should be cautioned to pay special attention to survey design so as to minimize error.