

Ekkachai Cheuanun 2006 : Simultaneous Equation Models for Export Prices and Quantities in the Rubber Industry of Thailand in 2002-2005. Master of Science (Statistics), Major Field: Statistics, Department of Statistics. Thesis Advisor: Assistant Professor Lily Ingsrisawang, Ph.D. 115 pages.  
ISBN 974-16-2935-4

The objectives of this study were to find out what economic factors have affected the export prices and quantities in the rubber industry of Thailand by using a simultaneous equation model with equilibrium and disequilibrium aspects. Data were used in this study were obtained from the Rubber Research Institute of Thailand. It covered the monthly time series data of Thailand natural rubber exports, RSS3 prices at Bangkok, Tokyo and Singapore, Thailand natural rubber production, Thailand natural rubber domestic consumption, currency exchange of US\$ and industrial capacity utilization of rubber and rubber products during the period of January 2002 to December 2005. Both equilibrium and disequilibrium models were developed and parameters were estimated using OLS and 2SLS. The model fit was considered from the values of  $R^2$ ,  $R^2_{\text{Adjust}}$  and MSE.

It turned out that the disequilibrium model was appropriate for determining the export prices and quantities of the rubber industry of Thailand, due to the high values of  $R^2$  and  $R^2_{\text{Adjust}}$  and the small value of MSE. The important economic factors in export prices model consisted of RSS3 prices at Singapore and the previous RSS3 prices at Bangkok at statistically significant level 0.05 ( $R^2 = 0.998$ ,  $R^2_{\text{Adjust}} = 0.998$  and  $\text{MSE} = 2.648 \times 10^{-5}$ ). For export quantities model, the industrial capacity utilization of rubber and rubber products variable was the only significant factor at level 0.05 ( $R^2 = 0.424$ ,  $R^2_{\text{Adjust}} = 0.354$  and  $\text{MSE} = 2.090 \times 10^{-3}$ ). Therefore, other economic factors should be considered and added in the quantities model for enhancing the model's model.

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30 / 10 / 06