

Determinants of the freight on board price (FOB price) of Ceylon tea

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FOB price is the average price of 1 kg of tea, which the exporting country, quotes for the buyer of another country. This study was done in 2003, using time series data available at the Sri Lanka Tea Board, in order to find the factors affecting the FOB price of Ceylon tea. The model was fit using Ridge Regression, since the traditional regression methods were not suitable, in a situation where the dependant variables were highly correlated.

Ridge regression analysis is used when the independent variables are highly intercorrelated, and stable estimates for the regression coefficients cannot be obtained via ordinary least squares methods. Specifically, a constant (k) will be added to the diagonal of the correlation matrix, which is then re-standardized so that all diagonal elements are equal to 1.0 (and the off-diagonal elements are divided by the constant). In other words, ridge regression artificially decreases the correlation coefficients so that more stable estimates can be computed.

The fitted Ridge Regression model yielded the following relationship:

$$Y_i = -0.07836 + 0.479 X_{1i} + 0.3114 X_{2i} + 0.4575 X_{3i}$$

Where,

Y - Average annual FOB Price for Sri Lanka tea in US \$ per kg

X₁- Average Annual Colombo auction price in US \$ per kg

X₂- Annual tea production in Sri Lanka, in 100 million kg s

X₃- Average annual FOB Price for India tea in US\$ per kg

The residual analysis was done at 5% significant level and the results indicated that the fit of the model was adequate to describe the behaviour of data. The factors, which were identified as determinants of FOB price by this analysis, were also consistent with the real world (practical) situation, where India was identified as the major competitor of the Sri Lankan tea industry.