

An Econometric Forecasting Model for Describing Tourist Arrivals Process in Sri Lanka

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Tourism is one of the major potential growth sectors in Sri Lanka. It contributes immensely to the economic growth of the country. This contribution has been quite significant during the past four decades. Although the tourist arrivals increased rapidly after introducing an open economic policy in 1977, the growth of tourism in Sri Lanka has not been steady and smooth. The study is based on the tourist arrivals' data from the highest tourist arrivals countries to Sri Lanka such as India, United Kingdom (*UK*), Germany, Maldives, France, Australia, Netherlands, United States of America (*US*), Japan and Italy during the period from January 1977 to April 2012. The tourist arrivals series of each country exhibits different cyclical periods and trend patterns, strong seasonality, and irregular fluctuations. The aim of the study is to find the best fitted time series model for describing tourist arrivals process to Sri Lanka from each country.

The Winter's Multiplicative Exponential Smoothing Method (*WMESM*) and Box and Jenkins Multiplicative Seasonal Auto Regressive Integrated Moving Average (*SARIMA*) method were applied to describe tourist arrival processes. Standard model selection criteria were used to select the best fitted models.

Most appropriate model for describing tourist arrivals processes of countries, India, *UK*, Germany and Australia are the *WMESM* on levels data while Maldives, Netherlands, *USA*, Japan and Italy are the *WMESM* on logarithmic transformed data. The *SARIMA* model on logarithmic transformed data is the most appropriate model only for describing tourist arrival processes of France and it was *ARIMA* (1,1,1) (0,1,1)¹². According to the scale developed by Lewis based on Mean Absolute Percentage Error (*MAPE*) models for Germany, Maldives Australia and *USA* (*MAPE* is less than 10%) are highly accurate whilst models for India, *UK*, France, Netherlands, Japan and Italy (*MAPE* is 10-20%) remain in a good level of accuracy.

Key words: *Tourist arrivals, Best fitted model, Model selection criteria, Levels of accuracy*