

## **DISAGGREGATION OF ANNUAL GDP TO QUARTERLY FIGURES: THE CASE OF SRI LANKA**

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The high frequency monthly or quarterly data are widely used in macroeconomic policy analysis in the short run and the medium term. In Sri Lanka, quarterly data are available only from 1996. It often poses a difficulty in analyzing several series jointly if their observation frequencies are not consistent. Instead of aggregating all other series to a yearly total, which leads to a considerable loss of information, it is more reasonable to disaggregate the annual time series data into quarterly figures, which would enhance the quality and efficiency of data. Quarterly data are highly useful for policy analysis. Long quarterly GDP series are often required for econometric modeling and forecasting. Although a number of univariate data interpolation methods are readily available in some computer packages with a little extra effort, we can produce more reliable interpolations based on related series. The research problem of the study is: What is the most appropriate procedure to convert annually GDP data to quarterly figures in Sri Lanka? There are no recent studies on this issue that examine univariate interpolation methods for Sri Lanka. The objective of this paper is to present a practical procedure that can be adapted to estimate quarterly GDP values from annual GDP values for Sri Lanka. This study generates quarterly GDP values by sectors from quarter 1 of 1977 to 2007. Sri Lanka began publishing quarterly GDP by sectors only since the quarter 1 of 1996. The paper uses these series to compare our estimates with univariate interpolations. The annual real GDP series in Sri Lanka is selected for illustrating various disaggregation methods using Econometric Computer package "ECOTRIM". These are the NAIVE procedure, the LS procedure, the BFL-FD (Boot, Fedus and Lisman First Difference) procedure, the BFL-SD (Boot, Fedus and Lisman Second Difference) procedure, the SW (Wei Stram procedure) and Chow-Lin procedure. The yearly observations from 1977 to 2007 are listed in the Central Bank Annual Reports in various years. The procedures described in the previous section are applied to the dataset, and their results are compared with the actual quarterly figures for 2000-2004, which are available in the Central Bank Annual Reports in various years. The results of the estimated quarterly values are reasonably close to the actual figures in all procedures except for the AR 1 Max, AR 1 Min and NAIVE methods. The BFL-FD, BFL-SD, Denton, Fernandez and Litterman min SSR methods give satisfactory disaggregation results in this example. Finally, the study selects the BFL-SD method to derive quarterly values. This method shows the smallest value for both MAE and RMSE.

*Keywords:* Disaggregation methods, Univariate interpolations, ARIMA representation