An empirical study of domestic electricity demand in Sri lanka

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The domestic electricity consumption in Sri Lanka shows a healthy growth in last 15 years in line with the expansion in Sri Lankan economy. It shows rapid increment after the end of civil war than the years before 2009. It is vital therefore to evaluate the factors effecting to the domestic electricity consumption of the country and to study dynamic interactions of them. The Objectives of this study are fit an Autoregressive Integrated Moving Average (ARIMA) model to compile a forecast for future domestic electricity demand for Sri Lanka and explore the dynamic interactions between domestic electricity consumption and several factors such as unit electricity cost, Gross Domestic Production (GDP), average temperature in Sri Lanka based on a Vector Error Correction model (VECM).

Forecasts derived from ARIMA model is good for short term predictions since it is solely depend on the volatility of the data against time. VECM provides more comprehensive estimates incorporating the other factors than the ARIMA model.

From 1997 to 2013 quarterly data are used for this study. It is found that ARIMA(3,2,0) model forecast the value with less than 5% of   Mean Average Percentage Error(MAPE). Further it is noted that VECM with lag 3 shows GDP as the most affected variable to the domestic electricity demand with less than 5% MAPE.

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