

The Effect of Economic Growth on Electricity Consumption for Turkey: A Nonlinear

Gülsüm Akarsu¹, Ondokuz Mayıs University, TR
gulsum.akarsu@omu.edu.tr

Nebile Korucu, Istanbul Kultur University, TR
nkorucu@gmail.com

Abstract

The relationship between economic growth and electricity consumption has been widely discussed by the applied literature. In this study, our purpose is to analyse the effect of economic growth on the electricity consumption by employing Markov-Switching Model for Turkey in order to account for nonlinearity. We use monthly data on electricity consumption and industrial production index covering the period from 1986:1 to 2012:12. We estimate MSIAH(2)-ARX(12) model by Maximum Likelihood Estimation Method using EM algorithm. We find that economic growth has positive, significant and nonlinear impact on the electricity consumption growth. Therefore, we can conclude that one should consider the nonlinearity between electricity consumption and industrial production while analyzing the effect of economic growth on electricity consumption and also in order to ensure supply and demand balance in the electricity sector during different states of the economy.

Keywords: Electricity Consumption, Conservation Hypothesis, Markov-Switching Model

Jel Codes: C22, Q4, Q43

¹ **Corresponding Author:** E-mail: gulsum.akarsu@omu.edu.tr Adress:
Ondokuz Mayıs University, TR Phone: 00903623121919-6030