GSERM - St. Gallen (2019)

Longitudinal Data Analysis

Exercise One
June 19, 2019

Introduction

The general purpose of this homework assignment is to examine differences between conditional (unit-effects) models and population-averaged (GEE) models for panel and time-series cross-sectional data with a binary outcome.

"Do economic sanctions destabilize country leaders?" That is the title of – and the provocative question asked in – Nikolay Marinov's (2005) article in the *American Journal of Political Science*.[1] Marinov derives a theory of economic sanctions' influence on leaders' ability to retain power, and tests that theory using annual data on all world leaders between 1919 and 2005 ($N = 210, T = 87$). His variable of interest is a binary indicator of leadership "failure," and he examines the influence of a range of covariates on that failure, including the presence of international sanctions against the country, economic wealth and growth, regime type, and leaders' age and tenure of office; see his article for details of data and coding. He estimates a conditional fixed-effects logit model with the (obligatory) cubic splines.

Exercise

Your general assignment is to replicate Marinov's analysis, and to subject it to a sensitivity analysis regarding model type. To that end, you should, minimally:

- Replicate the model he reports in *column one of Table 2* of his article; this is the specification on which you should focus for the balance of the exercise (that is, you can ignore (e.g.) the interactions-with-sanctions models in column three),
- Assess the robustness of his findings to (at least one) alternative approach for dealing with unit-level effects, and
- Whether a population-averaged (GEE) may be more justifiable, given the data and research question. In the latter case, fit and discuss GEE models, varying the working correlation structure, and discuss any differences you find.

This assignment is due (electronically, to Dr. Zorn at `zorn@psu.edu`), *in Adobe PDF format*, no later than 5:00 p.m. CET on Friday, June 21, 2019, and is worth 100 possible points.

[1] Available at the course github repository, in the "Exercises" folder.