

## **Referee report on “Estimating standard errors for the Parks model: can jackknifing help?”**

The paper proposes a new method to estimate the standard errors of the Feasible Generalized Least Squares (FGLS)/Parks (1967) estimator. The estimated standard errors of the Parks estimator are known to be downward biased [Beck and Katz (1995)]. The authors propose using the jackknife to correct this problem. Using a Monte Carlo study they conclude that:

- (i) the jackknife estimator can produce substantial improvements in coverage rates over FGLS (Parks);
- (ii) that coverage rates for the jackknife estimator are generally unsatisfactory.

### **Comments:**

- On page 2 the authors introduce the FGLS/Parks estimator. I think the section should contain more details concerning common applications of the Parks estimator.
- On page 3 the authors motivate the use of the jackknife by stating that there are no bootstrapping procedures that are valid for the simultaneous occurrence serial and cross-sectional correlation. I think it may be worthwhile to explain why and to motivate this statement in detail. In particular, from the reading of the paper it is not clear why the bootstrap cannot be applied to the Parks estimator.
- Messemer and Parks (2004) propose using the bootstrap to attenuate level distortion in the estimated covariance matrix of the Parks estimator. How does this technique relate to the previous statement and more generally with the findings of the paper?
- On pages 6-7 the authors illustrate their Monte Carlo experiment. Although they quote a previous study [Reed and Ye (2009)] using the same Monte Carlo design, the source of the datasets they use in the simulation is not specified. More generally, I think this section needs to be expanded in order to provide a clearer description of their Monte Carlo design.
- The Monte Carlo experiment does not compare the performance of the jackknife estimator with the Panel-Corrected Standard Error (PCSE) estimator of Beck and Katz (1995). Would it be possible to make such a comparison?

- If the jackknife procedure is somehow related to the bootstrap methodology of Messemer and Parks (2004), it would be interesting to replicate the Monte Carlo experiment including the bootstrap estimator and using the same, easily accessible, data of Messemer and Parks (2004).
- On page 9 the third reference should be “Cameron A.C. ...”.

The paper proposes an interesting methodology to correct the standard errors of the Parks estimator. I think the authors should expand the introductory section of the paper focusing on the comparison of the jackknife with the bootstrap procedure. Moreover, the section presenting the Monte Carlo experiment should be more detailed as emphasized above.

## References

- [1] Beck, N. and J. N. Katz (1995), “What to Do (And not to Do) with Time series Cross-Section Data,” *American Political Science Review*, 89, 634-647.
- [2] Messemer, C. and R., Parks (2004), "Bootstrap Methods for Inference in a SUR model with Autocorrelated Disturbances," Working Papers UWEC-2004-24, University of Washington, Department of Economics.
- [3] Parks, R. (1967), “Efficient Estimation of a System of Regression Equations When Disturbances Are Both Serially and Contemporaneously Correlated,” *Journal of the American Statistical Association*, 62, 500-509.
- [4] Reed, W. R. and H., Ye (2009), “Which panel data estimator should I use?”, *Applied Economics*, First published on: 16 July 2009 (iFirst).