

**Badi BALTAGI, Alain PIROTTE and Zhenlin YANG,**

"Diagnostic Tests for Homoskedasticity in Spatial Cross-Sectional or Panel Models", *Journal of Econometrics*, forthcoming.

The files in *package.zip* include the complete replication material for the paper.

## **THE DATA**

This package includes the data from Baltagi and Levin (1986), which is also used by Baltagi and Li (2004). This data concerns cigarette demand for 46 U.S. states over the period 1963-1992.

Baltagi, B.H. and D. Levin, 1986. Estimating Dynamic Demand for Cigarettes Using Panel Data: The Effects of Bootlegging, Taxation and Advertising, Reconsidered. *The Review of Economics and Statistics* 68, 148-155.

Baltagi, B.H. and D. Li, 2004. Prediction in the panel data model with spatial autocorrelation. In L. Anselin, R. Florax and S.J. Rey (eds.), *Advances in Spatial Econometrics: Methodology, Tools and Applications*, Springer, Berlin, 321-335.

Here, we reduce the time period from 1980 to 1984 (the year 1979 is also used for the DSPD case). We consider the year 1982 for the SLR case. The data files are:

- *Spat-Sym-US.xls* (spatial contiguity U.S. states matrix);
- *cigarette82.xls*, *cigarette80\_84.xls* and *cigarette79\_84.xls* (cigarette demand data).

The full data set and the spatial U.S. states matrix can be downloaded from Elhorst's website: <https://spatial-panels.com/software/>

## **THE CODES**

The main three (MATLAB) codes are:

### **1 - *Applied\_Code\_SLR\_Statistics.m* (i.e. Cross-sectional case)**

This code refers to Section 2 of the paper which concerns the Spatial Linear Regression (SLR) Model. It allows the computation of  $T_{SLR}$ ,  $T_{SLR}^r$ ,  $T_{SLR}^*$  and  $T_{SLR}^{r*}$  statistics.

The other two last main MATLAB codes concern the panel data cases, i.e. spatial static versus dynamic panel data models.

### **2 - *Applied\_Code\_SPD\_Statistics.m***

This code refers to Section 3 of the paper which concerns the Spatial Panel Data (SPD) Model. It allows the computation of  $T_{SPD}$ ,  $T_{SPD}^r$ ,  $T_{SPD}^{rr}$ ,  $T_{SPD}^*$ ,  $T_{SPD}^{r*}$  and  $T_{SPD}^{r**}$  statistics.

### **3 - *Applied\_Code\_DSPD\_Statistics.m***

This code refers to Section 4 of the paper which concerns the Dynamic Spatial Panel Data (DSPD) Model. It allows the computation of  $T_{DSPD}$  and  $T_{DSPD}^*$  statistics.

The other files concern sub-routines mainly associated to Maximum Likelihood approaches.

All codes require MATLAB software. You have to create a folder and unzip the *Applied\_Homoskedastic\_Tests.zip* file. Then upload the main three MATLAB codes on the windows editor. You just have to modify the beginning of each code to consider mainly your own data,

variables and models. Some guidelines are given at the beginning of each of the three main codes mentioned above.

**Contacting the authors:**

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