

Description of the Sample.gss program file

This file allows practioner to compute the panel data unit root tests that have been proposed in the paper. The procedure uses two GAUSS source files: (i) “brcode2_noprint.src” is the GAUSS code that corresponds with the Bai and Perron (1998, Econometrica) procedure to estimate the number and position of the structural breaks, and (ii) “Panicbrk.src” is the GAUSS code that computes the panel data unit root tests.

The file “Panicbrk.src” contains the main procedure to run the computations, with the following sintaxis (this is also found in the “Panicbrk.src” file):

```
/*
** Procedure to compute the Panel Break test statistic
**
** Sintaxis:
**
** {Z_test, test_n, test_chi, Z_test_sim, test_n_sim, test_chi_sim, fhat} = pan-
elbreak(x,model,p_ar,k,datevec);
**
** Input:
**
** x (TxN)-matrix of time series
**
** model (5x1)-vector, where
**     model[1] = 1 for the model with a constant (no breaks)
**               2 for the model with a trend (no breaks)
**               3 for the model with mean shifts
**               4 for the model with trend shifts
**
**     model[2] = m number of breaks allowed
**
**     model[3] = 0 the breaks are known
**               = 1 the breaks are unknown
**
**     model[4] the method that is used to estimate the number of breaks:
**               = 1 for the sequential procedure in Bai and Perron (1998)
**               = 2 for the BIC
**               = 3 for the LWZ
**               = 4 for the case where the number of breaks is known
**
**     model[5] scalar, denotes the number of breaks when model[4] = 4
**
** p_ar Scalar, order of the autoregressive model that is used
**       in the estimation of the long-run variance
**
** kmax (2x1)-vector, where
```

```

**          kmax[1] collects the number of common factors
**          kmax[2] = 0 if the number of factors are known
**                = 1 if they are estimated using the BIC criterion
**
** Output:
**
**          Z_test test statistic based on the moments
**
**          test_n test statistic based on p-values using the N(0,1) distribution
**
**          test_chi test statistic based on p-values using the
**                Chi-squared(2N) distribution
**
**          z_test_sim simplified test statistic based on the moments
**
**          test_n_sim simplified test statistic based on p-values using
**                the N(0,1) distribution
**
**          test_chi_sim simplified test statistic based on p-values using the
**                Chi-squared(2N) distribution
**
**          fhat ((T-1)xr) matrix with the estimated common factors
**
**/

```

In the set of files that we provide, we include a sample GAUSS file (entitled “sample.gss”) that shows how practitioners should select the different parameters to run the computations. Some of the parameters that appear in the file are needed for the Bai-Perron procedure to work. This is clearly stated in the “sample.gss” file.