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****                          SURGAT.SRC
****     SURGAT (Seasonal Unit Roots Graphical Analysis and Testing device)
****
****                 This program is originally written by
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**** Financial support from research projects UPV-038.321-G55/98 and
**** 9/UPV 00038.321-13503/2001 of the University of the Basque Country and
**** PI-1999/70 of the Basque Government is gratefully acknowledged.
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/*
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* USE:
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 SURGAT requires procedures SPECTRUM.SRC (by Estima, in the distribution of RATS 5)
 and LAGSELEC.SRC  by Norman Morin, nmorin@frb.gov, April 1998, that you can find in
 http://www.estima.com

    OPTIONS:

       CRIT=AIC/[BIC]/LB/LM/GS/ALL
     With this option you select the criterion, which
     determines the choice of the lag length for the
     tests regressions and for the AR model used to substract the trend and
     the deterministic seasonals. This option is inheritated from the procedure
LAGSELECT
     (in lagselec.src)

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*(From lagselec.src, by Norman Morin):
*
* LAGSELECT determines the optimal lag length for a series using
*     one of or all of five criteria:
*
*     (1) [AIC] AIC model selection criterion
*     (2) [BIC] BIC model selection criterion
*                 (The BIC is also called the Schwarz criterion)
*     (3) [LB]  Ljung-Box test for residual serial correlation
*     (4) [LM]  Lagrange multiplier (LM) test for residual serial correlation
*     (5) [GS]  General-to-simple (GS) reduction test
*     (6) [All] Calculates lag lengths by all five criteria
*
*   (1) and (2) perform regressions from 0 to MAXLAG (maxlag here is aprox T/3) lags
and chooses
*      the optimal lag length by the minimum AIC or BIC.
*   (3) and (4) adds lags until the Ljung-Box test (3) or the Lagrange
*      multiplier test (4) fails to reject no serial correlation of
*      order SCLAG at a user defined level (SIGNIF) or until lag = MAXLAG.
*   (5) starts with MAXLAG lags, and if the final lag is significant (at the
*      level SIGNIF), that lag length is chosen; if not, the lag length
*      is continually reduced until either the last included lag is
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*        significant or no lags are included.
*
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        NUMSER=[4] Maximum number of series opened by the user from the input file.
This is the maximum number
        of series that the program is offering to the user in doing the analysis.
This is an esthetical option
        if you have any doubts about this you can put NUMSER=1000 and the program
will offer to you all the
        disposable series

        TEX/[NOTEX] option for writing the results of the tests codified as LaTeX
tables.

        SAVE/[NOSAVE] option for saving automatically the graphs in the temporary
directory
        c:\tmp

IMPORTANT:
For using SURGAT you must include in your 'allocate' the option "regress" with a
value of
at least (nobs/3)+14 for example,

---------------
open(window) tempout 'second window'
change output tempout
cal 1975 1 4
com nobs = 99:3-75:1+1
com re = fix(nobs/3) + 14
all(regress=re) 0 99:3
open data file.dat
data / g

source surgat.src
@surgat(crit=bic)
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*************
* DESCRIPTION:
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 This is a menu-driven program to help in the analysis of the seasonal component and
the
trend of a (quarterly, monthly or annual) time series.

 Once the series is selected, a set of simple transformations can be applied:  log,
regular difference,
seasonal difference, regular+seasonal difference, the series without its
deterministic trend,
without its deterministic seasonal, estimated eficiently in both cases by means of
a deterministic+autoregressive model.

 The procedure offers several graphs of the series and its transformations:

 1- the series, ACF , PACF and spectrum
 2- seasonal filters
 3- seasonal paths (Buys-Ballot plots)
 4- regular paths
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The program also contains a menu for testing unit roots over the series and its transformations, applying the tests:

  1- ADF,
  2- HEGY,
  3- KPSS,
  4- Canova-Hansen.

If the procedure is invoked with the option SAVE, all the graphics displayed innthe screen are automatically
saved in the directory c:\tmp (so, in this case, this directory must be created before).

The codification of the filename of the graphics is the following:

In firts position:

-logarithm: lxxx
-without logarithm: oxxx

In second position:

-Without differences: xoxx
-Regular difference: xdxx
-Seasonal diff.:   xsxx
-Regular and sesonal diff.: xtxx

In third position:

-Without transformation: xxox
-Without deterministic trend: xxtx
-Without determ. trend and determ.seasonals xxdx

In fourth position:

-Autocorrelations: xxxa
-Seasonal filters: xxxf
-Seasonal paths: xxxe
-Regular paths: xxxr

EXAMPLE:

In the file "patolstr.rgf " we will have

- series "pato"
-(l) in logs
-(s) in seasonal difference
-(t) without (linear) deterministic trend
-(r) graphic of the regular path

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* END OF DESCRIPTION OF SURGAT.SRC PROCEDURE
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