Package Name: GBASS
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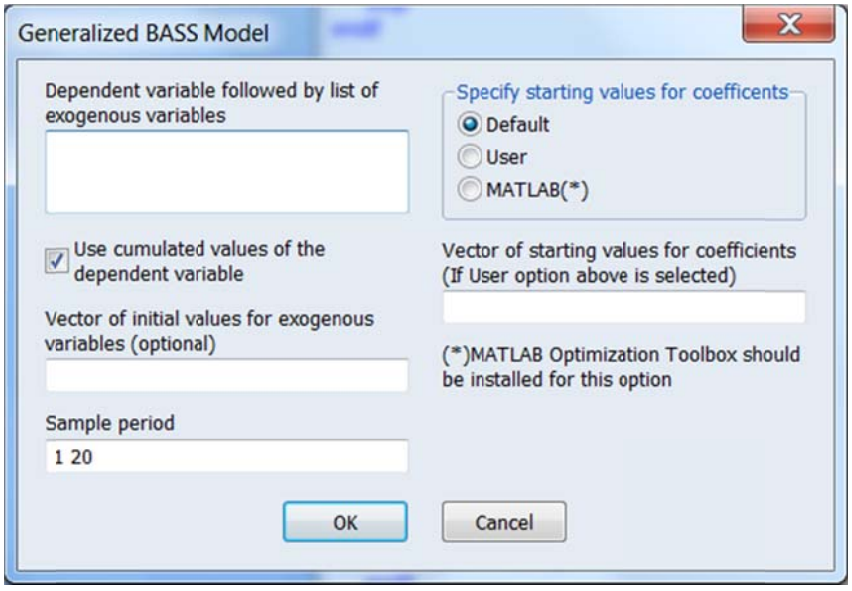
Date: 2011/06/20

Add-in Type: Global
Default Proc Name: gbass
Default Menu Text: Generalized BASS Model
Interface: Dialog and Command Line

Description: This add-in performs the generalized version of classical BASS model, which is mostly used in new product forecasting or technology forecasting. The model allows the user to input a set of decision variables. If no exogenous variable is provided, then the model reduces to classical BASS model. Details of the Generalized BASS method used in this add-in can be found in Bass et. al. (1994).

Dialog: Upon running the add-in from the menus, a dialog will appear:



In the first box, you should specify the dependent variable followed by list of regressors. By default, cumulated values of the dependent variable are used in estimation. Simply uncheck the box, if you do not wish to transform the dependent variable. If you have initial values (t=0) for exogenous variables, enter the name of the vector that contains these values. Otherwise, first observation (i.e. start of the sample) of each variable will be used as the initial value. In the third box, you are expected to specify the sample period for which the default is current workfile sample. Since the model is nonlinear, starting values for coefficients are of vital importance. Three options are available to user:

i) **Default:** Coefficients of exogenous variables are initialized to zero. Other parameters are randomly determined, and therefore will change in each run.

ii) **User:** User supplied coefficients. Name of the vector should be entered into the subsequent box.

iii) **MATLAB:** This option is viable only if you have a valid MATLAB connection and if the "optimization toolbox" is installed. "Lsqnonlin" solver is used in estimating the starting values.

Command Line:

Syntax: gbass(options)

Options:

Argument	Type	Explanation
eqn	*string*	Dependent variables followed by independents
x0	*string*	Name of the vector of initial values for independents
m	*numeric*	Supply starting values for coefficients (1 = "Default", 2 = "User", 3 = "MATLAB")
c0	*string*	Name of the vector of starting values for coefficients
smpl	*string*	Sample period (default is the workfile sample)
cum		Use the cumulative values of dependent variable

Examples:

1) gbass(eqn="sales price advertising")

Simply estimates the model for "Sales" (as dependent variable). "Price" and "Advertising" will be treated as exogenous variables.

2) gbass(eqn="sales price advertising",cum)

Does the same thing as (1), but transforms the dependent variable and uses the cumulated values.

3) gbass(eqn="sales price advertising",cum,x0="xbeg",m=3,smpl="1 20")

The model takes the initial values of exogenous variables from vector xbeg. Starting values of coefficients are estimated via MATLAB. Finally, the sample period is specified as 1 to 20..

Reference: Bass, F. M., Krishnan, V. T., and Jain, D. C. (1994) "Why The BASS Model Fits Without Decision Variables", Marketing Science, 13: 3, 203 – 223.