Changes and Enhancements to SAS/ETS Software in Versions 7 and 8

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Overview

This chapter summarizes the enhancements to SAS/ETS software made since the publication of *SAS/ETS Software: Changes and Enhancements for Release 6.12*. All of these changes and enhancements are incorporated into the individual procedure chapters and are described in greater detail.

Version 7 of SAS/ETS software contains enhancements to several procedures, a new data access engine for FAME databases, and incorporation of the new Output Delivery System for all procedures. Additionally, the OUTEST data sets in iterative SAS/ETS procedures now contain the variable _STATUS_ to report on the convergence status of the estimation.

Information about changes and enhancements that were implemented in Version 8 is preceded by the Version 8 icon. All other changes and enhancements described in this section were implemented in Version 7. In other words, if your site upgraded directly from Version 6 to Version 8, then all of the changes and enhancements described here are new to you. If you upgraded from Version 7 to Version 8, then only the items preceded by the Version 8 icon are new to you.

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The Output Delivery System

All procedures now incorporate the Output Delivery System (ODS). This is a system for managing the results of a procedure. By default, the results for a procedure are directed to the SAS listing file as in previous releases, but with ODS you can create HTML or RTF files, create SAS output data sets of any table in the output, select or exclude pieces of output from a procedure, or modify the organization and style of that output. Refer to Chapter 6, "Using the Output Delivery System," or *The Complete Guide to the SAS Output Delivery System* for more information.

The SASEFAME Engine

A new data access engine (SASEFAME) has been added to provide seamless access to FAME databases.

The ARIMA Procedure

The following option was added to the FORECAST statement.

SIGSQ=
specifies the variance term used in the formula for computing forecast standard errors and confidence limits. The default value is the variance estimate computed by the preceding ESTIMATE statement. This option is useful when you wish to generate forecast standard errors and confidence limits based on a published model. It would often be used in conjunction with the NOEST option in the preceding ESTIMATE statement.

The following observations were added to the where variable _STAT_ in the OUTSTAT= Data Set.

STAT=NITER	Number of iterations
STAT=CONV	Convergence Status

The DATASOURCE Procedure

The DATASOURCE procedure supports more data files, including the 1996 CRSP binary data, CRSP ACESS 97 CDROM data, and the DRI data files.

The MODEL Procedure

The MODEL procedure now allows you to model a nonconstant error variance, permitting the specification of ARCH- and GARCH-type regression models.

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The following features have been added to the MODEL procedure for version 8 :

- NOOLS and NO2SLS options specify bipassing using OLS or 2SLS to get initial parameter estimates for GMM, ITGMM, or FIML. This is important for certian models that are poorly defined in OLS or 2SLS or if good initial parameter values are already provided. Note that for GMM, the V matrix is created using the initial values specified and this may not be consistently estimated.
- MSE. variables are now available for estimation and simulation. There is a MSE. variable created for each dependent/endogenous variable in the model. The MSE.*y* variable contains the value of the mean square error for *y* at each iteration. These variables are used to specify the lagged values for GARCH type models.
- Quasi-random numbers can be used to drive Monte Carlo simulation. Quasi-random numbers are specified using the QUASI= option on the SOLVE command. Two Quasi-random number generators supported by the MODEL procedure are the Sobol sequence (QUASI=SOBOL) and the Faure sequence (QUASI=FAURE). The default is QUASI=NONE which is the psuedo random number generator.

PROC SPECTRA Enhancements

With the advent of long variable names in Version 7, the variable names created by the SPECTRA procedure for the output data set have been made more readable. Instead of using the index of the variable in the VAR list as a suffix, the actual variable name is used as a suffix. The new format for the output variables can be selected with the LONGNAME option on the command line.

The Time Series Forecasting System

The Time Series Forecasting System has an improved graphical interface including enhancements to all windows and tool bars. The Produce Forecasts and Automatic Model Fitting Results windows have been expanded to make it easier to customize forecasts and to explore automatically selected models. Confidence limits have been added to autocorrelations plots. Through improved command line support, users can create their own customized interfaces to the system or run large batches of unattended forecasts. The command line and graphical interfaces can be used interchangeably to create and update forecasting projects.