The RATSletter

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Estima

RATS Version 6.0

We're pleased to announce that WinRATS Version 6.0 will begin shipping in early April. Improvements include several powerful new instructions, nearly seventy new functions, and upgrades to the user interface. Version 6 also includes completely updated and revised copies of the user manuals.

Perhaps the most significant new feature is the built-in **GARCH** instruction. It allows you to estimate most variations of univariate and multivariate ARCH and GARCH models with a single command. In addition to being much easier to use, the **GARCH** command is also much faster than using **MAXIMIZE** to estimate the same models.

Other new estimation instructions include **LDV**, for limited dependent variables, and **DDV**, for discrete dependent variables. As with **GARCH**, models that required extensive maximum-likelihood setups in earlier versions can now be done with a single command. This includes censored and truncated data models, ordered logit and probit, multinomial logit, conditional logit, and Poisson count models.

We've also added several "convenience" instructions which simplify various tasks. These include **SSTATS**, for computing various statistics over a range of series or formula entries; **UFORECAST**, which provides an easier way to do dynamic or static forecasts of univariate models; and **GSET**, for setting series whose elements are arrays.

Speaking of convenience, you'll find that we've made some significant improvements to the user interface, including more menu-driven *Wizards*, new toolbar buttons, and more. See page 3 for details.

And, if you are currently using Version 5.0, an upgrade to Version 6 will bring you all the new features that were introduced with Versions 5.10 and 5.11. These include many of the menu-driven *Wizards* described on page 3; the **FUNCTION** command for creating user-defined functions; new instructions for doing non-parametric regressions, robust regressions (including LAD and quantile regressions), recursive least squares; and more.

We invite you to read through the rest of this newsletter for more details on what Version 6 has to offer. We think this will be a "must have" update for anyone using RATS.

Also, note that we've made a concerted effort to simplify our update pricing scheme this time around. The price for an update to WinRATS Version 6 will be $150 for *any* existing single-user Windows or DOS version of RATS. So, even if you have an ancient "PC RATS" license from the early 1990's, you can upgrade to Version 6 for just $150.

The only other option will be to upgrade to the "Professional" version of WinRATS for an additional $150. This adds X11 seasonal adjustment capabilities, and the ability to read and write FAME databases.

RATS 6: New Instructions

The instructions below have been added since Version 5.0:

DBOX	Allows user-definable dialog boxes with controls such as check boxes, radio buttons and popup boxes.
DDV	Estimates models with Discrete Dependent Variables, such as logit, probit, multinomial logit and Poisson regressions.
FIXED	Sets tables of fixed values within a procedure.
FUNCTION	Allows user-definable functions which mimic the pre-defined RATS functions.
GARCH	Estimates univariate and multivariate GARCH models.
GCONTOUR	Creates contour graphs.
GSET	Does element wise operations on series whose elements are matrices.
LDV	Estimates models with Limited Dependent Variables, such as tobits.
NPREG	Performs non-parametric regressions using Nadaraya-Watson (kernel) techniques or Lowess.
REPORT	Generates flexible reports in table format.
RLS	Estimates by recursive least squares, generating recursive residuals and related statistics.
RREG	Estimates by robust regression.
SSTATS	Computes statistics accumulated over the entries of series.
UFORECAST	Forecasts univariate models in a more convenient instruction than **FORECAST** and **STEPS**.

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Changes to Existing Instructions

New Options (Since 5.0)

All instructions with a ROBUSTERRORS option now permit a wider range of lag window types, using the LWINDOW option. Also, the SMPL and SPREAD options can now use formulas, rather than series. Finally, the hypothesis testing instructions now have TITLE options to label output.

Changes to Existing Instructions

Below are some of the most significant improvements made to existing instructions. These are listed in alphabetical order. Instructions with some of the most important changes are shown in italics.

ALLOCATE No longer required—you can specify the default length using the **DATA** command. Also, you do not need to clear the memory before re-executing an **ALLOCATE**.

AR1 Prais-Winsten (PW) has been added as a choice for method.

BOXJENK New REGRESSORS option makes ARMAX models easier to handle.

CALENDAR New options for handling data spaced more than one year apart, and for non-standard frequencies.

CMOMENT New options allow it to compute the outer product of two sets of regressors.

CORRELATE New CENTER option so (with NOCENTER) you can compute the correlations without the means being subtracted from the data. The same option is also available in **CROSS**.

CVMODEL New options allowing for different forms of the objective function, and for computing the function value for a set of parameters.

DATA SKIPLINES option for skipping header lines at the top of spreadsheet and text files.

DENSITY Has three new kernel types: logistic, flat and Parzen, and returns the bandwidth used in the variable %EBW. The default bandwidth has been changed to (generally) be shorter.

DLM Now handles the exact initial Kalman filter for non-stationary models. Also, you can now access the series of estimated covariance matrices, and incorporate exogenous shifts in the state equation.

FILTER Includes several new filter types, including the Hodrick-Prescott, Henderson, flat filters and convolutions of flat filters.

FRML New REGRESSORS option for putting in a formula that's a standard regression $\mathbf{X}'\beta$.

GRAPH KEY=ATTACHED will attach the key titles to the lines for the series.

GRTEXT New options for positioning the text. Also allows you to break up strings into multiple lines.

MAXIMIZE METHOD=EVALUATE computes the function given the input parameter set. New DERIVES option returns the derivatives of the function with respect to the parameters.

MCOV Can produce the "mcov" matrix with multiple series of residuals. A wider range of lag windows are allowed, including asymmetrical windows. The new OPGSTAT option is useful for computing LM statistics. The CENTER option centers the moment statistics.

NLLS New OPTIMALWEIGHTS option computes the two-step optimal weights for GMM estimates. The ZUMEAN option allows you to handle a situation where the moment conditions have a non-zero mean.

NLSYSTEM The *J*-statistic for GMM is computed automatically.

NNLEARN The PAD option is a more convenient alternative to the YMIN and YMAX options, and an improved algorithm provides superior performance.

PANEL New options allow you to include the sum and observation count across individuals and time in your construction.

PREGRESS New options for estimating by first difference and by cross-sectional SUR.

PRJ Has new options for computing the variance of the in-sample fitted values; computing densities and distribution functions for logit and extreme value as well as normal, and for computing fitted values and others at a specific set of values.

QUERY Provides greater control with the VERIFY option to check the validity of the user's input and the INITIALIZE option.

SCATTER The LINES option allows you to add straight lines to a graph.

SUMMARIZE Includes the VALUE option, which allows you to use **SUMMARIZE** to compute a linearized variance of a non-linear function.

RATS 6: Interface Improvements

With the recent 5.1 and 5.11 updates, and now the new Version 6 release, we have made some major improvements to the RATS interface. Experienced users will appreciate the convenience features that allow them to work faster and more efficiently, while new users will find a much gentler learning curve.

Menu-Driven Wizards

Menu-driven *Wizards*, first introduced in Version 5.1, are now available for setting the **CALENDAR**, reading in data, doing data transformations, generating statistics, performing various regressions, doing hypothesis tests, graphing series, and accessing the built-in functions. The *Wizards* actually generate the corresponding RATS commands, so you can save your work as a complete RATS program that can be easily re-run later as needed, or used as the basis for more complex analysis.

The *Data Wizards* will be of particular interest to many users. Rather than having to examine your data file in another application, and then write out the appropriate **CALENDAR**, **ALLOCATE**, **OPEN DATA**, and **DATA** instructions, you can now read in most data sets with just a few mouse clicks.

Series List Window

The *Wizards* menu also features a *Show Series* operation which displays a window listing all the series currently in memory. From this window, you can use toolbar buttons to generate graphs, compute statistics, and edit series. The window automatically updates whenever you create or read in new series. You can also configure RATS to open the series list window automatically when you start the program.

Integrated RATSDATA Functionality

Virtually all of the functionality previously available only in the stand-alone RATSDATA program has now been incorporated in RATS itself. You can open files, view and edit series, and generate graphs all with just a few mouse clicks. When you're ready, you can then use the *Data Wizard* to read your data into memory.

Recently-Used Files List

RATS now maintains a list of recently-used files at the bottom of the *File* menu, to make it easy to re-open your files.

Better "Undo"

The editor now features full Undo/Redo capabilities. You can undo typing, cut and paste operations, and more.

Other Enhancements

You can now set the default start-up directory via the *File–Preferences* dialog box. Each time you start RATS, this will be the "current" directory. The *File–Directory* operation is still available for temporarily changing the current directory.

Also, a pair of new toolbar buttons make it easy to set up split input and output windows, tiled either horizontally or vertically.

RATS 6: Prices and Ordering

Pricing is provided below for the Windows version of RATS. Watch for future newsletters and web site updates with pricing for the UNIX, Linux, and Macintosh versions.

Note: If you have **maintenance contract**, you do not need to send in an order form—your RATS 6 update will be shipped automatically. Do let us know if your address has changed recently.

Updates and Upgrades

Prices for updates of single-user licenses are provided below. The basic price to update to WinRATS 6.0 from any earlier Windows or DOS version is $150. For an extra $150, you can upgrade to the Professional version, which adds X11 seasonal adjustment and the ability to read and write FAME format data files.

	Update to Version 6 of:	
Product	**WinRATS**	**WinRATS Pro**
WinRATS Professional	—	$150
WinRATS (any other)	$150	$300
RATS386 (any)	$150	$300

There are no shipping charges on orders shipped to locations in the contiguous U.S. Add $30 for shipping to Alaska, Hawaii, Canada, and U.S. possessions, and $50 for shipping to other countries.

Be sure to include your current serial number with your order. If you cannot find your serial number, please contact us at *sales@estima.com* or 800-822-8038 before placing your order. Please provide your full name and address, and any information on when and where you purchased RATS.

Please contact Estima if you have any questions, or if you need to update a multi-user or UNIX/Linux license.

New Licenses

Prices for new single-user licenses are provided below. Please contact Estima if you need prices for multi-user licenses.

Product	First Copy	Addl. Copies
WinRATS Professional	$650	$500
WinRATS	$500	$350

Purchased a New License Recently?

If you purchased a *new* RATS license after January 1, 2004, you are eligible for a free update to Version 6. This applies to all serial numbers ending with P334 and above (P335, P336, etc.). To receive your update, fill out and return the enclosed order form, include your serial number, and enter zero for the update cost.

Shipping charges as described on the order form will apply for all orders going outside the United States. So, if you are located outside the U.S., please be sure to include credit card information or another form of payment (check, money order) for shipping costs when placing your order.

RATS Conference in Ireland

A reminder that the School of Business Studies at Trinity College in Dublin, in collaboration with the Institute for International Integration Studies, is presenting a RATS workshop and conference on Thursday, April 22, 2004 (the day before the Irish Economic Association Annual Conference). The conference will take place at the Institute, beginning at 1000h and ending no later than 1800h.

There is *no charge* to attend the conference, but you should reserve a place ahead of time. To reserve a spot, or to obtain more information, please contact Dr. Brian M. Lucey, School of Business, TCD, at *blucey@tcd.ie*.

Tom Doan, the owner of Estima and principal developer of RATS, will be presenting an overview of RATS 6.0 and discussing “Advances in VAR Modelling”. Other scheduled presenters include Maurice Roche, Maynooth University; Guiseppi Bruno, Bank of Italy; and Valerio Poti, Trinity College. Topics discussed will include: “Using RATS for Non-Linear Modelling”, “Error Component Modelling”, and “Multivariate GARCH Models”.

More information is also available by going to:

http://www.tcd.ie/Secretary/Conferences/

and clicking on the link for the “RATS Conference”.

Web Site: More Textbook Examples

We have continued our project of writing RATS programs for the worked examples from various leading econometrics textbooks. New additions to the collection on the website include examples from Badi Baltagi’s *Econometrics,* Johnston and DiNardo’s *Econometric Methods*, Marno Verbeek’s *A Guide to Modern Econometrics*, and a partial set of examples from Ruey Tsay’s *Analysis of Financial Time Series*. We’ve also added more examples from Greene’s *Econometric Analysis*.

In addition, we have updated many of the existing examples to take advantage of new features in Version 6—this includes examples from Fumio Hayashi’s *Econometrics*, James Hamilton’s *Time Series Analysis*, Jeffrey Wooldridge’s *Econometric Analysis of Cross Section and Panel Data*, Domadar Gujarati’s *Basic Econometrics*, Francis Diebold’s *Elements of Forecasting*, and William Greene’s *Econometric Analysis*. The “Version 5” variations of these programs will still be available for downloading.

To download the examples, just go to www.estima.com, click on the “Procedures and Examples” button, and follow the links to the “Textbook Examples”.

Web Site: New Procedures

We’ve also posted a few new procedures on the website, as well as some revisions to older procedures. We now have more than 100 procedures available, so take a look at the “Procedures and Examples” section at www.estima.com to see what might be of interest.

The RATS 6.0 Manuals

The documentation for RATS 6.0 retains the same format and organization we adopted with Version 5.0. As before, the *User’s Guide* provides general instructions on using the program and coverage of the relevant econometrics topics, while the *Reference Manual* provides a detailed reference to all of the instructions and functions.

Both books are printed in a convenient soft-bound 7"x9" format. We will also continue to include electronic copies of both books in Adobe PDF format, for quick reference when you do not have the manuals with you.

The *Reference Manual* has been expanded to document the many new features discussed elsewhere in this newsletter. The *User’s Guide* has undergone even more extensive revision, to reflect the new capabilities of RATS 6.0, and recent developments in econometrics. Several chapters in particular have been significantly revised and, in some cases, almost completely rewritten. These include Chapter 12 (Special Models and Techniques), Chapter 13 (Simulations, Bootstrapping, and Monte Carlo Techniques), and Chapter 14 (Cross Section and Panel Data).

Chapter 10, which covers VARs, now provides more coverage of Structural VAR models, while Chapter 6 (Hypothesis Testing) offers more details on stability and specification tests.

The *User’s Guide* also features many more examples than before, with particular attention given to demonstrating the graphics capabilities.

RATS 6: New Functions

Version 6 features nearly seventy new functions. These include a wide range of new random draw functions, including `%RANMVNORMAL` and two random Wishart functions, as well as several “suites” of functions for manipulating polynomials, regressor lists, and tables of regressors.

With a total of more than 230 functions to choose from, finding the one need could be somewhat difficult. That’s where the menu-driven *Function Wizard* comes in. You can use the *Function Wizard* to browse through the available functions by category, see descriptions and syntax of each function, and then paste the one you need into your program.

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