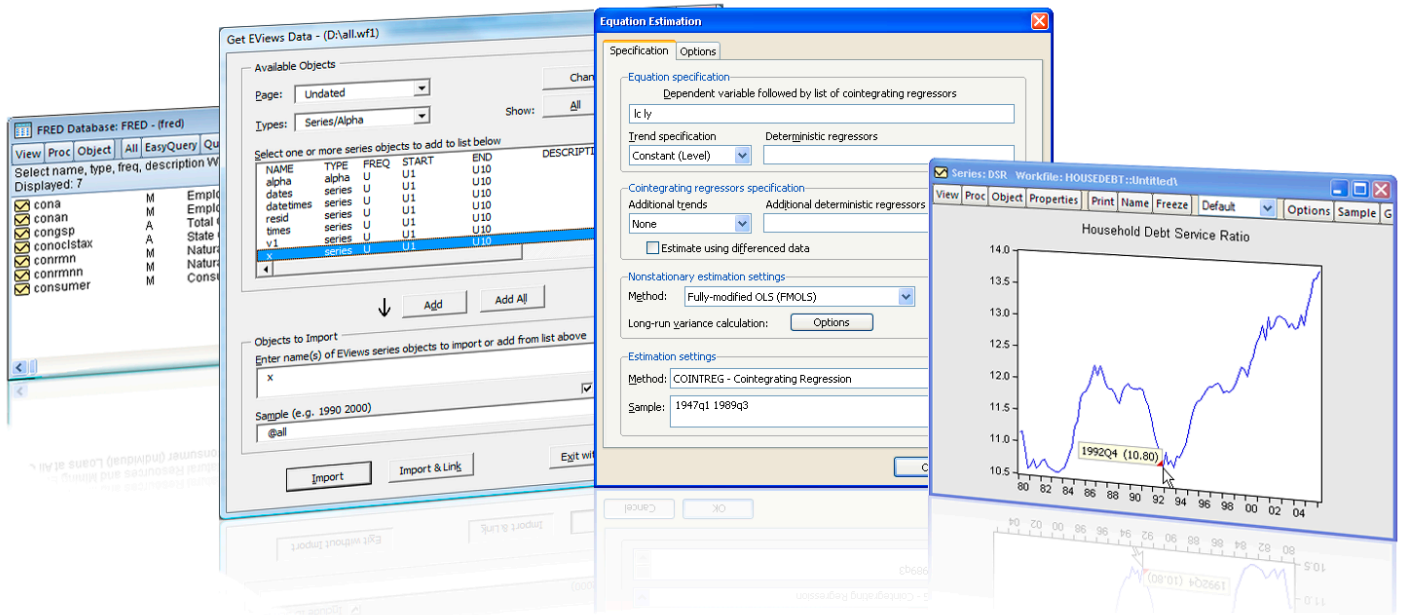# What's New in EViews **7**

...the most powerful EViews ever, featuring a wide range of improvements in performance, user-interface, data handling, graphics, programming, and of course... statistics and econometrics.

EViews offers academic researchers, corporations, government agencies, and students access to powerful statistical, forecasting, and modeling tools through an innovative, easy-to-use object-oriented interface.

EViews 7 features a wide range of improvements in performance, user-interface, data handling, graphics, programming, and of course, statistics and econometrics.
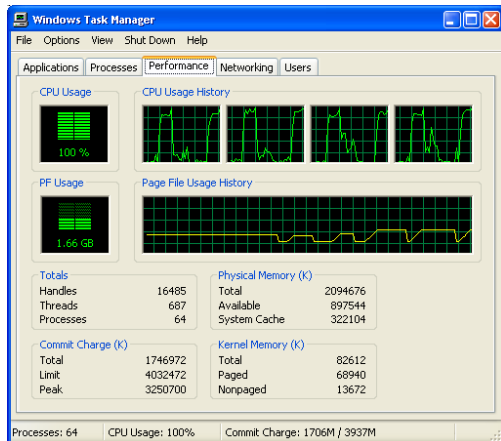
Join us for a quick tour of some of the exciting new features in EViews 7 and see why this is the most powerful EViews ever.
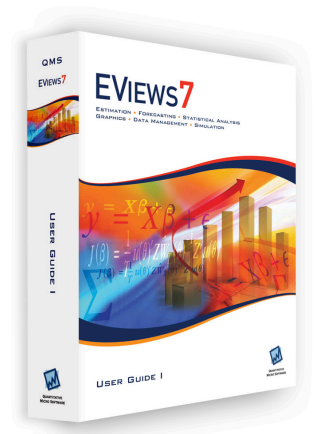
> **For over a quarter century, QMS has offered innovative solutions for econometric analysis, forecasting, and simulation...**

EVIEWS Unleashed

As part of a general effort to improve performance, a variety of key computational routines and algorithms have been scrutinized and tuned for optimal performance. The result is that most statistical computations in EViews are now significantly faster. You should definitely notice the difference in long-running routines, most notably in iterative procedures.

In addition, EViews 7 has been retooled to take advantage of multiple processors or cores. And you don't have to do a thing to enable multi-core support. By default, EViews 7 will automatically sense whether your computer has more than one processor core and will optimize its calculations accordingly. You can even tell EViews how many cores you wish to use.

> **Fine-tuning and multiple processor/ core support make Version 7 the fastest EViews ever...**

EVIEWS Talks to FRED®
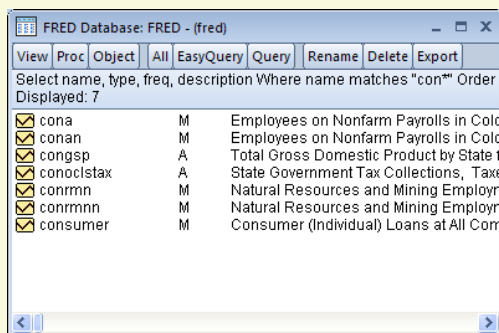
FRED® (Federal Reserve Economic Data) is a publicly accessible database of more than 20,000 U.S. time series of multiple frequencies, provided by the Economic Research Division of the Federal Reserve Bank of St. Louis. The FRED® database offers a wide variety of downloadable data, including interest rates, exchange rates, national income accounts, and many others. Data found in FRED® are drawn from several national and international sources and are updated frequently. Oh, did we forget to mention that FRED® data are free?

Prior to EViews 7, importing data from FRED® required that the data first be downloaded into either a Microsoft Excel or text file, and then be imported into an EViews workfile. EViews users can now use EViews to directly connect to, open, query, and import data from the FRED® database using the familiar, easy-to-use EViews database interface.

For more information on the FRED® databases, please see http://research.stlouisfed.org/fred2.

> **EViews users can now connect to the FRED® database using the familiar EViews database interface.**

We've Got a Live One!
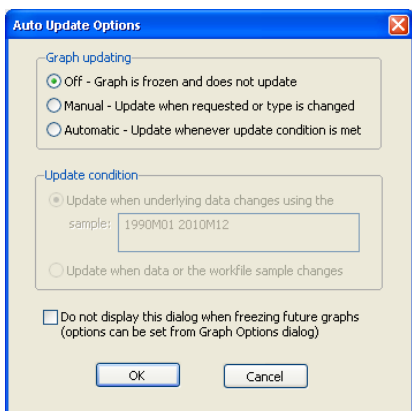
Perhaps the most important graphics improvement in EViews 7 is the addition of auto-updating graphs.

Previously, when you created a graph object by freezing an object view, the data in the graph were fixed to the values at the time of creation. You could use EViews tools for customization, many of which were available only for graph objects, to change the look of the graph, but the underlying data could not be changed. To update the data you would have to create a new graph by freezing an updated object view and then reapply any customization.

Frozen graph objects may be linked to the series or group from which they were created. You may determine if and when a frozen graph should update as the sample or its underlying data change. Thus, you may treat a frozen graph as a snapshot of the data at the time it was frozen, as in previous versions of EViews, or allow it to update.

> **Graphs may be set to update as the underlying data or sample change.**

Quick Summary

EViews 7 offers such a wide range of exciting changes and improvements that we can't possibly describe all of the new features in great depth.

The following is an brief listing of some of the highlights of Version 7.

Performance

- Optimized routines for faster computation.
- Multi-processor/core support with custom user settings.

EViews Interface

- "Theme" support lets you customize the appearance of your EViews windows.
- Enhanced drag-and-drop support throughout the program.
- Improved command entry interface with enhanced command editing and recall, and undocking of the command window.
- Improved graph options interface.
- Updated global options interface.
- Auto-update from the web ensures that your copy of EViews 7 is always up-to-date.
- All new compiled-HTML based help system.

Data Handling

- New workfile data frequencies: high-frequency (Intraday) data, with support for hours, minutes, and seconds, multi-year, bimonthly, fortnight, 10-day, and daily (with arbitrary range of days of the week).
- Greatly enhanced support for strings, including new string and string vector objects, an extensive library of new functions for creating and manipulating string lists, and improved programming support.
- Direct support for working with the the FRED® (Federal Reserve Economic Data) database.
- New support for reading Microsoft Excel® 2007 XLSX Files.
- Improved data import with new command line tools for reading foreign data into an existing workfile.
- EViews database capacity has been expanded from 2GB to 64GB.

Graphs

- New "live" graphs auto-update as the underlying data change.
- Improved graph options interface.
- Interactive observation info display lets you inspect labels and values associated with points on a graph.
- Improved control over formatting of dates in the observation scale/axis.
- More flexible custom observation labels for the observation scale/axis.
- Added control over date label positioning and two row labeling.
- Enhanced control over date/observation axis grid line placement.

Programming Support

- User-defined dialog functions allow you to create your own dialogs to interact with users.
- Programs now support message logging.
- The program file editor now supports quick multi-line commenting.
- Greatly enhanced support for strings, including new string and string vector objects, and an extensive library of new functions for creating and manipulating string lists.
- Enhanced support for text objects.
- New object data members for extracting information about an object in the workfile.
- A new family of functions for obtaining information about the current EViews environment.

Econometrics & Statistics

External Interfaces

- The new EViews Microsoft Excel® Add-in offers a simple interface for reading data stored in EViews workfiles and databases from within Microsoft Excel.

- Configure external applications or develop programs that use the new EViews OLEDB driver to read data stored in EViews workfiles (WF1) and EViews databases (EDB).

- Work with the new EViews COM automation server by creating scripts or programs that launch or control EViews, transfer data, and execute EViews commands.

- EViews COM Automation Client Support for MATLAB® and R allows you to use EViews to interact with the powerful programming languages of MATLAB® and R.

Interpolation Tools

- Linear, Log-linear, Catmul-Rom Spline, Cardinal Spline interpolation are now offered as a series procedure.

Long-run Variance Computation

- Compute symmetric or one-sided long-run covariances of a series or group of series using nonparametric kernel, parametric VARHAC, and prewhitened kernel methods. Use the enhanced data-based automatic bandwidth and information criteria lag selection methods.

Whitening

- Whitening is offered as a series or group procedure with fixed or automatic lag length specifications.

Variance-Ratio Tests

- Perform variance ratio testing for a random walk or martingale data series. Construct homoskedastic and heteroskedastic robust tests using the asymptotic normal distribution or wild bootstrap. Support for rank, rank-score, sign-based and multiple comparison tests.

Single-Equation Cointegration

- Single equation tests for cointegration (Engle-Granger, Phillips-Ouliaris, Hansen, Park) are now supported.

- Single equation cointegrating regression estimation using Fully-Modified OLS, Canonical Cointegrating Regression, or Dynamic OLS.

Instrumental Variables & GMM

- Greatly improved single equation Instrumental Variables/Two-Stage Least Squares and GMM estimation (with added support for LIML and K-class estimation).

- New GMM estimation tools include an expanded set of options for HAC weighting, continuously updating estimation (CUE), and a wide range of standard error options including Windmeijer and updated GMM.

- New tests and diagnostics include an instrument orthogonality test, a regressor endogeneity test, weak instrument diagnostics, and a GMM specific breakpoint test.

Generalized Linear Models

- Generalized Linear Models extend linear regression to include a broad range of specifications. Among these models are log-linear regression, probit and logit specified by proportions, and regression with count or survival data.

- A wide range of family, link, dispersion, and estimation options are offered, allowing for computation of a variety of robust standard error and QMLE specifications.

- Notably, prior variance and frequency weighted GLM specifications are supported.

Diagnostics

- Expanded options for single equation regression coefficient covariance estimation featuring parametric VARHAC support and added tools for kernel and prewhitened kernel HAC computation.

- Enhanced post-estimation diagnostics for single equation regression models include a standardized coefficients and elasticity view, confidence interval view, variance inflation factors, coefficient variance decomposition, influence statistcs, leverage plots, and ARMA frequency spectrum plots.

- A wide range of new test and diagnostic views for IV/TSLS and GMM equations.

Let's Make a Connection
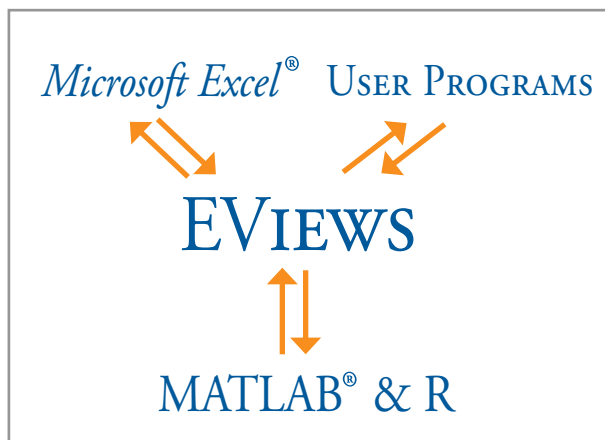
EViews 7 features COM server and client support as well as OLEDB/Microsoft Excel® access to EViews data.

COM Automation server support allows you to develop your own programs or scripts that launch or control EViews, transfer data, and execute EViews commands. COM Automation client support is provided for MATLAB® and R servers, allowing you to use EViews to launch or control those applications, transfer data, and execute commands. You now have access to the powerful MATLAB® and R programming languages and the large library of statistical routines written in these languages, so you can create programs and routines that perform tasks not currently implemented in EViews.

The EViews OLEDB driver and easy-to-use Microsoft Excel® Add-In allow you to retrieve or link to EViews workfile or database data from other applications.

COM and OLEDB make it easy for EViews to interact with other applications...

Having a Productive Dialog
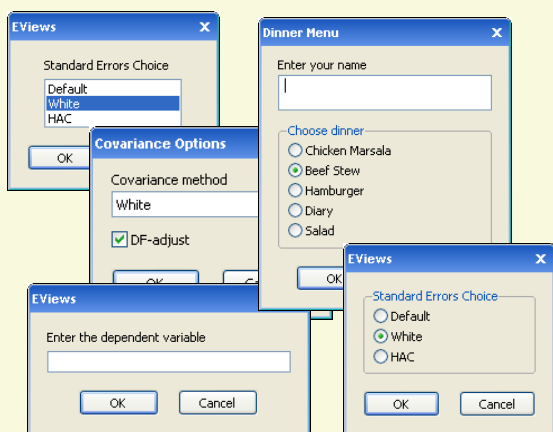
Have you ever wanted to interact with a running EViews batch program, say to provide additional input or retrieve information? Or perhaps you've wanted to develop a custom program for use by others that interacts with the end-user, prompting for input and displaying output.

EViews 7 now allows you construct several types of user-interface controls, or dialogs, within your program. These dialogs permit users to input text, or select from a list of choices variables, and allow you to to pass information back to users, all during the running of the program.

You can create dialogs containing a simple prompt, text edit field, list control, or radio control. Or combine the various controls to create a custom interface with multiple inputs. The only limit is your imagination.

User-designed dialogs let you create programs that interact with users.

Regression Under the Influence

EViews 7 features a wide-range of new equation diagnostics, making it easier than ever to evaluate the quality of your specification. Two new diagnostics, influence statistics and leverage plots, examine whether there are influential observations or outliers that may have an inordinate impact on the equation estimates.

Influence statistics measure the difference that a single observation makes to the regression results, or how different an observation is from the other observations in an equation's sample. EViews provides a selection of six different influence statistics: RStudent, DRResid, DFFITS, CovRatio, HatMatrix and DFBETAS.

Leverage plots are the multivariate equivalent of a simple residual plot in a univariate regression. Like influence statistics, leverage plots can be used as a method for identifying influential observations or outliers, and aid you in graphically diagnosing potential failures of the underlying assumptions of a regression model.

Influence statistics and leverage plots aid you in identifying regression outliers.

Econometrics and Statistics: Computation

Long-run Covariances
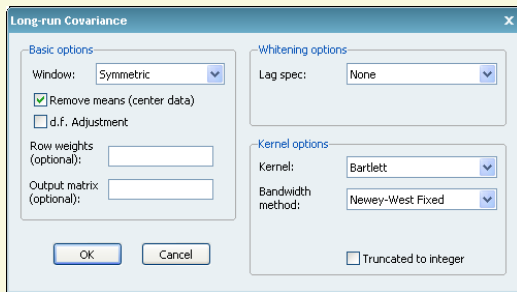
The long-run (variance) covariance matrix occupies an important role in modern econometric analysis. Estimation of this matrix is, for example, central to calculation of efficient GMM weighting matrices, heteroskedastic and autocorrelation (HAC) robust standard errors, and for some types of unit root and cointegration analysis.

EViews 7 provides powerful, easy-to-use tools for computing, displaying, and saving the long-run covariance matrix of a single series or all of the series in a group object. You may compute symmetric or one-sided long-run covariances using nonparametric kernel (Newey-West 1987, Andrews 1991), parametric VARHAC (Den Haan and Levin 1997), and prewhitened kernel (Andrews and Monahan 1992) methods. In addition, EViews supports Andrews (1991) and Newey-West (1994) automatic bandwidth selection methods for kernel estimators, and information criteria based lag length selection methods for VARHAC and prewhitening estimation.

## Econometrics and Statistics: Computation / Estimation

Single-Equation Cointegration
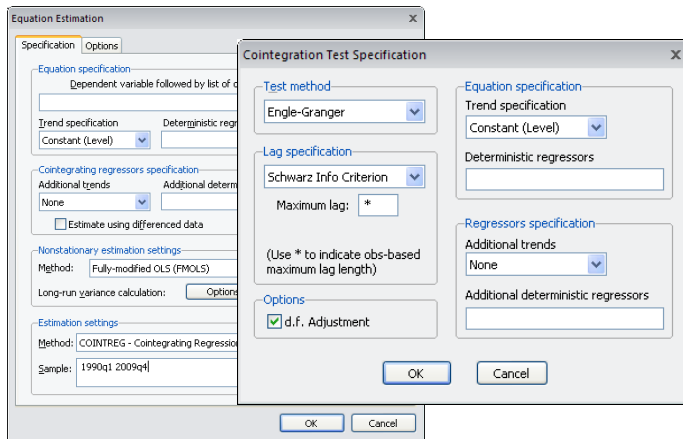
In addition to the previously supported Johansen system methodology, EViews 7 offers a full set of tools for estimating and testing single equation cointegrating relationships.

Three fully efficient estimation methods, Fully Modified OLS (Phillips and Hansen 1992), Canonical Cointegrating Regression (Park 1992), and Dynamic OLS (Saikkonen 1992, Stock and Watson 1993) are supported, along with various cointegration testing procedures: Engle and Granger (1987) and Phillips and Ouliaris (1990) residual-based tests, Hansen's (1992b) instability test, and Park's (1992) added variables test.

Econometrics and Statistics: Estimation / Diagnostics

Instrumental Variables / GMM
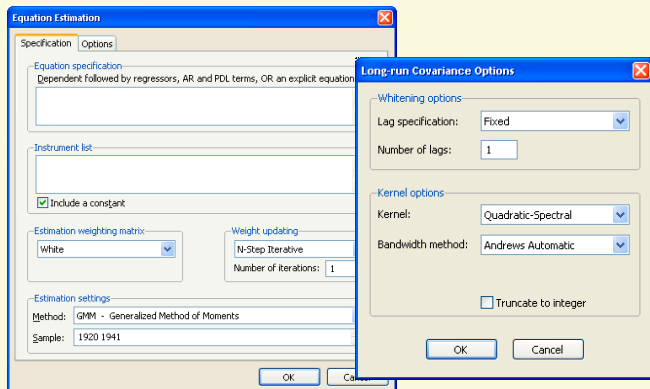
Instrumental variables/TSLS estimation in EViews offers a number of new features, ranging from new LIML and K-class estimators to improved nonlinear and AR estimation algorithms. New options allow you to choose from an expanded set of robust standard error estimators and to not include the constant as an instrument.

Single equation GMM has been completely overhauled. There is an expanded set of options for the HAC weighting matrix, support for continuously updating estimation and a number of other weight iteration options, and a host of new standard error options, including Windmeijer (2000, 2005) standard errors.

All three types of IV and GMM estimation offer new diagnostics and tests, including an Instrument Orthogonality Test, a Regressor Endogeneity Test, a Weak Instrument Test, and a GMM specific breakpoint test.

For more info:

Visit us on the web at http://www.eviews.com
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