

# A Guide to Using EViews with *Using Econometrics: A Practical Guide*

Written By

R. R. Johnson\*  
University of San Diego

## Introduction

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### Purpose of this guide:

Econometrics is defined by A. H. Studenmund<sup>1</sup> to be "the quantitative measurement and analysis of actual economic and business phenomena." This definition highlights the importance of learning econometrics by working through examples. This guide demonstrates how to use EViews to complete the econometric analysis illustrated in the text. EViews output can be copied and pasted into word processing files to facilitate the research report writing process.

Each chapter in this guide corresponds to a chapter in *Using Econometrics: A Practical Guide (UE)*, by A. H. Studenmund. All of the econometric processes examined in a chapter are reproduced in the corresponding chapter of this guide, using EViews whenever a data set is provided.<sup>2</sup> This guide is a do-it-yourself manual and students should be able to reproduce the econometric analysis described in *UE*, without further assistance from the instructor. Best results are achieved when the text chapter is read first and then the operations are performed as you read the guide. Most procedures described in this guide are explained in a step-by-step manner so that even the novice user should be able to follow. The reader is advised to consult the owner's manual or the help function in EViews in cases where: a deeper understanding of EViews' functions is desired, a description of how EViews performs the calculations is desired, or references to the source of the econometric theory applied by EViews is sought.

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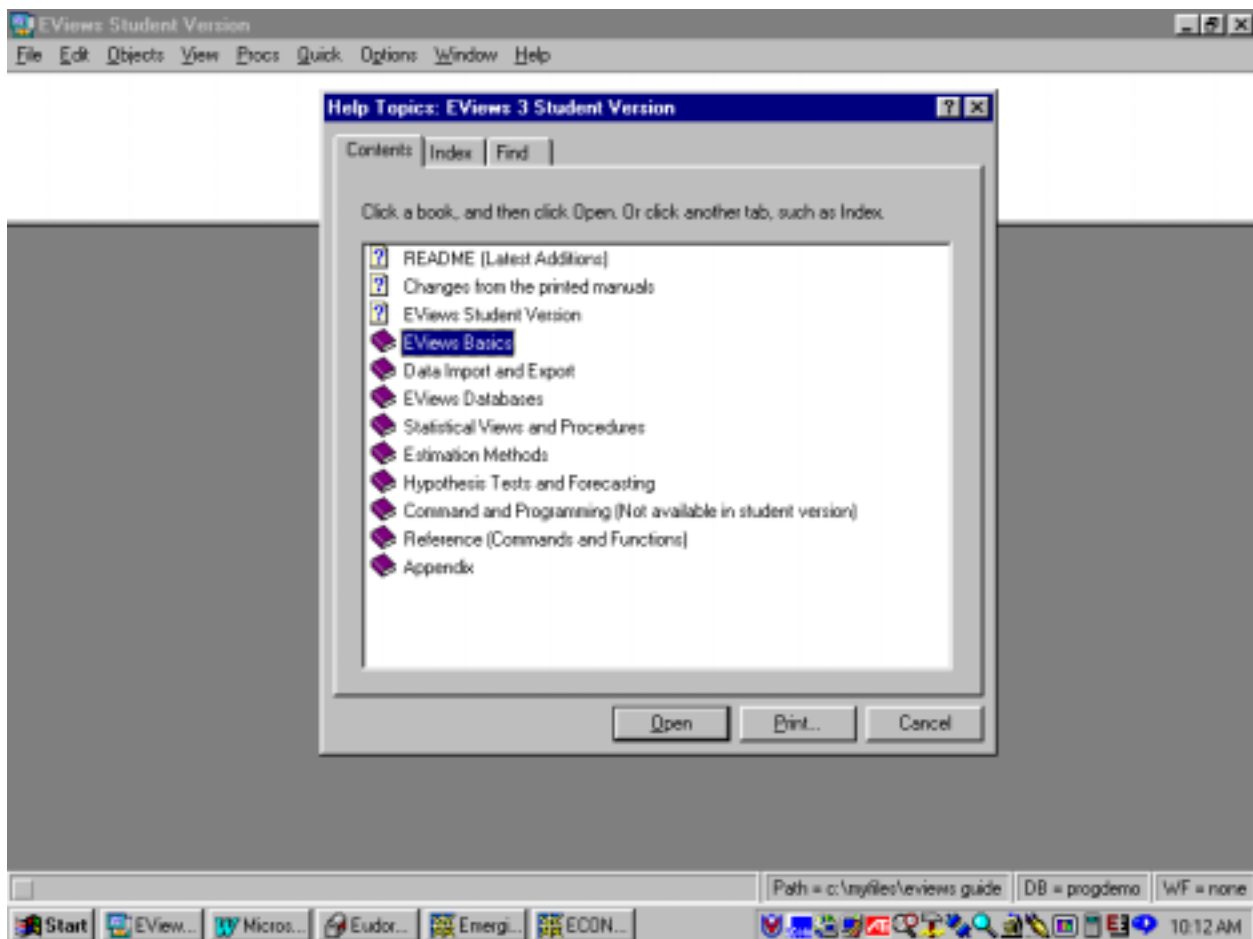
\* I would like to thank A. H. Studenmund for his helpful comments and a special thanks to Pat Johnson for her superb editorial assistance and for making sure that the instructions in this guide are clear and easy to follow. Your feedback is very valuable - send your comments about this site and this guide to <mailto:Johnson@acusd.edu>.

<sup>1</sup> A. H. Studenmund, *Using Econometrics, A Practical Guide* (fourth edition), Addison Wesley, 2000, p. 3.

<sup>2</sup> For a variety of reasons, data sets for some of the examples presented in the text are not available.

## EViews help:

For additional information, open the EViews program and select **Help/EViews Help Topics...** and a list of help categories is revealed (see the graphic below). Each help category contains a list of subtopics that are revealed by double clicking the book icon in front of the category. Other topics and subtopics can be viewed by scrolling down and clicking the subject of interest. If you know the specific subject matter, you can view the **Contents** listed in alphabetical order or use **Find** to locate the topic of interest. EViews uses standard Windows **Help**, the on-line manual is fully searchable and hypertext linked. The **Help** system contains updates to the documentation that were made after the manuals went to press. In addition to the information provided in the manuals and the help system, go to <http://www.eviews.com> on the World Wide Web and review the **Frequently Asked Questions (FAQ)** section, where you can find answers to common questions about installing, using, and getting the most out of EViews.



## EViews basics and objects:

The EViews program is designed around the concept of objects. Objects are collections of related information and operations that are bundled together in an easy-to-use unit. Virtually all of your work in EViews will involve using and manipulating various objects. Think of an object as a filing cabinet or organizer for the item with which you are working. The most important object in EViews is the workfile and your first step in any project will be to create a new workfile or to load an existing workfile into memory. Each object consists of a collection of information related to a particular area of analysis. Objects associated with a particular concept are said to be of a given type, where the type name is used to identify the subject of analysis. Associated with each type of object is a set of views and procedures which can be used in association with the information contained in the object. For example, a series object is a collection of information related to a set of observations on a particular variable. An equation object is a collection of information related to the relationship between a collection of variables. Since an equation object contains all of the information relevant to an estimated relationship, you can move freely between a variety of equation specifications simply by choosing to work with a different equation object. You can examine results, perform hypothesis and specification tests, or generate forecasts at any time. Managing your work is simplified since only a single object is used to work with an entire collection of data and results. **Tip:** Name all objects that you think you want to view later. Then the object can be recalled by double clicking the named object in the workfile.

The most fundamental objects in EViews are workfiles, series, and equation objects. There are, however, a number of other objects that serve special functions. A list of EViews objects includes: Coefficient Vector, Databases, Equation, Graph, Group, Model, Pool (Time Series / Cross-Section), Sample, Series, State Space, System, SYM (Symmetric Matrix), Table, Text, VAR (Vector Autoregression), Vector/Row, and Vector Scalar. All objects, except workfiles and databases, have their own icons that are displayed in the workfile window (see object types below along with their respective icons). When a new workfile is created, two objects are displayed in the workfile window – the Coefficient Vector (filled with zeros) and the residual series (filled with NA's).

## Object Types

The most fundamental objects in EViews are series and equation objects. There are, however, a number of different types of objects, each of which serves a unique function. Most objects are represented by a unique icon which is displayed in the object container window.

	Coefficient Vector		Series
	Equation		State Space
	Graph		System
	Group		SYM (Symmetric Matrix)
	Matrix		Table
	Model		Text
	Pool (Time Series / Cross-Section)		VAR (Vector Autoregression)
	Sample		Vector/Row Vector
	Scalar		

Despite the fact that they are also objects, object containers do not have icons since they cannot be placed in other object containers—thus, workfiles and databases do not have icons since they cannot be placed in other workfiles or databases.

To create an object: select **Objects/New Object** from the main menu or workfile menu, click on the type of object that you want to create, provide a name and then click on **OK**. For some object types, another dialog box will open, prompting you to describe your object in more detail. For most objects, however, the object window will open immediately. A workfile must be open before an object can be created. The process of creating a workfile and objects will be explained later in this guide.

## Mathematical expressions in EViews:

EViews contains an extensive library of built-in operators and functions that allow you to perform complicated mathematical operations with your data using just a few keystrokes. In addition to supporting standard mathematical and statistical operations, EViews provides a number of specialized functions for automatically handling the leads, lags, and differences that are commonly found in time series data. All of the operators described below may be used in expressions involving series and scalar values. When applied to a series expression, the operation is performed for each observation in the current sample.

EViews follows the usual order in evaluating expressions from left to right, with operator precedence order (from highest precedence to lowest):

1. ^
2. \*, /
3. +, subtraction (-)
4. <, >, <=, >=, =
5. and, or

For a list and description of all of the operators and special functions available in EViews, click on: **Help/Function Reference**.

The table below explains the function of each mathematical operator used by EViews.

Expression	Operator	Description
+	add	$x+y$ adds the contents of X and Y
-	subtract	$x-y$ subtracts the contents of Y from X
*	multiply	$x*y$ multiplies the contents of X by Y
/	divide	$x/y$ divides the contents of X by Y
^	raise to the power	$x^y$ raises X to the power of Y
>	greater than	$x>y$ takes the value 1 if X exceeds Y, and 0 otherwise
<	less than	$x<y$ takes the value 1 if Y exceeds X, and 0 otherwise
=	equal to	$x=y$ takes the value 1 if X and Y are equal, and 0 otherwise
<>	not equal to	$x<>y$ takes the value 1 if X and Y are not equal, and 0 if they are equal
<=	less than or equal to	$x<=y$ takes the value 1 if X does not exceed Y, and 0 otherwise
>=	greater than or equal to	$x>=y$ takes the value 1 if Y does not exceed X, and 0 otherwise
and	logical and	x and y takes the value 1 if both X and Y are nonzero, and 0 otherwise
or	logical or	x or y takes the value 1 if either X or Y is nonzero, and 0 otherwise

### Areas in EViews main window:

The screenshot shows the EViews main window with the following components and callouts:

- Main Menu Area:** Located at the top, containing the menu items: File, Edit, Objects, View, Procs, Quick, Options, Window, Help. A callout box points to this area with the text "This is the main menu area".
- Command Window:** The area below the menu bar where commands are entered. A callout box explains: "This is the command window. Type a command in this window and press ENTER to execute the command immediately. For example, when the equation for a scalar is typed (e.g., `=@qchisq(.975,9)`, which calculates the 95th percentile of the c2 distribution) is typed and ENTER is pressed, the value will appear in the status line at the bottom left of the screen. For more information on commands see: **Help/EViews Help Topics.../Command and Programming/Command Basics.**"
- Work Area:** The large central area where objects are displayed. A callout box explains: "This is the work area where EViews will display the various object windows that it creates. Think of these windows as similar to the sheets of paper you might place on your desk as you work. The windows will overlap each other with the foremost window being in focus or active. Only the active window has a darkened titlebar."
- Status Line:** Located at the bottom of the window. A callout box points to it with the text "This is the status line". It displays the current value of the active object: "Scalar = 16.9189776046".
- Footer:** At the bottom right, there are three small boxes showing: "Path = c:\web\evIEWS files", "DB = progdemo", and "WF = none".

Refer to the graphic above as you read a description of the various areas of the EViews window below. References to these areas will be made throughout this guide.

**The title bar:** The title bar, labeled EViews Student Version, is at the very top of the main window.

**The main menu:** Just below the title bar is the main menu. If you move the cursor to an entry in the main menu and click on the left mouse button, a drop-down menu will appear. Clicking on an entry in the drop-down menu selects the highlighted item. Some of the items in the drop-down menu may be listed in black and others in gray. In menus, black items may be executed while the gray items are not available.

**The command window:** Below the main menu bar is an area called the command window where EViews commands are typed. The command is executed as soon as you hit **ENTER**.

**The status line:** At the very bottom of the window is a status line, which is divided into four sections. The left section will sometimes contain status messages sent to you by EViews. These status messages can be cleared manually by clicking on the box at the far left of the status line. The next section shows the default directory that EViews will use to look for data and programs. The last two sections display the names of the default database and workfile.

**The work area:** The area in the middle of the window is the work area where EViews will display the various object windows that it creates. Think of these windows as similar to the sheets of paper you might place on your desk as you work. The windows will overlap each other with the foremost window being in focus or active. Only the active window has a darkened titlebar.