THE STATA NEWS

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Stata software for generalized linear measurement error models

Three new commands are available to download and use with Stata 8 to fit generalized linear models when one or more covariates are measured with error. These new commands allow adjustments to be made using

- Instrumental variables
- Regression calibration
- Simulation/extrapolation (SIMEX)

The software was developed by R. J. Carroll, J. Hardin, and H. Schmiediche and its development was partly funded by the National Institutes of Health, National Center for Research Resources, Grant Number 5R44RR12435-03. The SIMEX method is very computationally intensive, and this new implementation of it is the fastest ever. For those interested in this topic, we also recommend the book *Measurement Error in Nonlinear Models* by R. J. Carroll, D. Ruppert, and L. A. Stefanski (Chapman & Hall, 1995), which is available from the Stata Bookstore.

To download the new commands, type

```
. net from http://www.stata.com/merror
. net install merror
```

These commands are implemented using Stata 8's new plug-in features, which allow code written in C to be added to Stata. This means that the new commands are fast.

For further discussion on measurement error and the software, point your browser to **http://www.stata.com/merror/**. In addition to a brief discussion, you will find the 162 slides from the one-day workshop on measurement error presented at the North American Users' Group Meeting by Ray Carroll, James Hardin, and Henrik Schmiediche, along with drafts of four papers to appear in the Stata Journal.

Stata 8 now supports plug-ins

Developers at StataCorp have long followed a programming model that involves writing the majority of code in the ado language, while relegating computationally-intensive tasks to the Stata executable, which is written in the C programming language. With Stata's newly-added plug-in support, users can now follow this programming model as well.

A "plug-in" is generally defined as a piece of software that adds extra features to a software package. In the context of Stata, a plug-in consists of compiled code (written in C) that a user may attach to the Stata executable, thus, in effect, creating a new and customized Stata executable.

Plug-ins can serve as useful and integral parts of Stata user-written commands. Because they consist of compiled code, plug-ins run just as fast as if they were part of the official Stata executable. As such, they can speed up the execution of computationally intensive portions of commands that would otherwise have to be written using Stata's ado language. Plug-ins can be used to speed up calculations that require looping over the observations in the data, require looping over the elements of large matrices, or are otherwise too intricate to be efficiently coded in the ado language.

An easy-to-use syntax provides a straightforward method for passing data and communicating results between plug-ins and the Stata executable.

For more information, including documentation on the use of plug-ins, see **http://www.stata.com/support/plugins/**.

Do you subscribe to the Stata Journal?

The Stata Journal is a refereed publication that focuses on articles of interest to all Stata users, from beginner to advanced. The most recent issue includes articles about kernel density estimation, two-stage probit least squares, multiple-test procedures and smile plots, serial correlation in linear panel-data models, and odds ratios and logistic regression. For more information, visit the Stata Journal web site at **http://www.stata-journal.com**.

To subscribe to the Stata Journal, use the enclosed bookstore order form or subscribe online at **http://www.stata.com/bookstore/sj.html**.
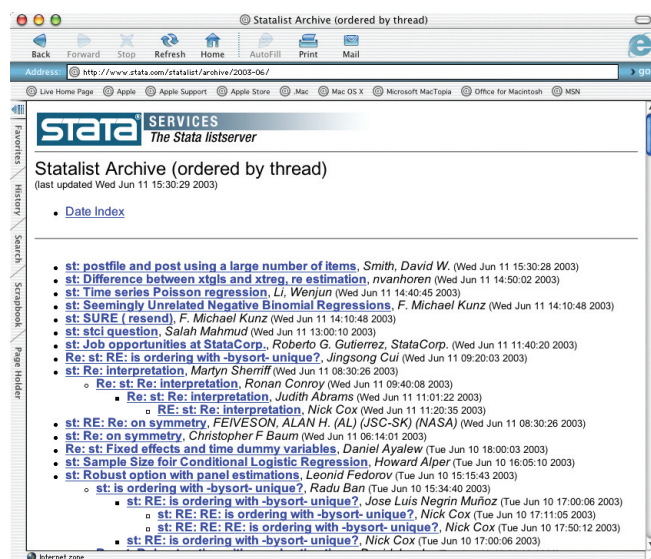
Searchable Statalist archives now available

StataCorp now provides a searchable archive of all postings to Statalist. The archive also allows you to view individual postings by thread or by date. The archive is available at

http://www.stata.com/statalist/archive/

What is Statalist?

Statalist is a large, active group of users who exchange information via email about using Stata. The list is not moderated, although it is maintained by Marcello Pagano, Harvard School of Public Health.

We recommend that all Stata users (or even non-users who have an interest in Stata) subscribe to Statalist. To subscribe, unsubscribe, or obtain more information about Statalist, visit **http://www.stata.com/support/statalist/**.

Title: *Maximum Likelihood Estimation with Stata* (2nd edition)
Author: William Gould, Jeffrey Pitblado, William Sribney
Publisher: Stata Press
Copyright: 2003 (available in July)
Pages: approximately 300; paperback
ISBN: 0-881228-83-5
Price: $42.00

Maximum Likelihood Estimation with Stata (2nd edition)

Maximum Likelihood Estimation with Stata, second edition, is written for researchers in all disciplines who need to fit models using the method of maximum likelihood. The second edition offers a wealth of new material with most chapters updated to reflect new features added to the `ml` command since the publication of the first edition.

Stata 8 introduced a host of new features for maximum likelihood estimation, and the authors cover these features in detail. The new features include

- linear constraints
- three new optimization algorithms (DFP, BFGS, and BHHH)
- outer product of gradients (OPG) variance estimator
- complete and automatic support for survey data analysis

In the final chapter, the authors illustrate the major steps required to get from log-likelihood function to fully operational estimation command. This is done using several different models: logit and probit, linear regression, Weibull regression, Cox proportional hazards model, random-effects regression, and seemingly unrelated regression.

This new text is currently in press and will be available in July. Visit **http://www.stata-press.com/books/ml.html**. Orders may be placed now online or using the enclosed bookstore order form.
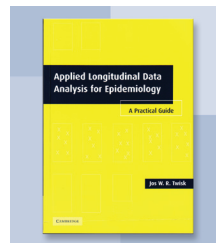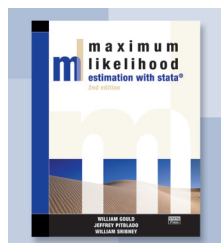
Title: *Applied Longitudinal Data Analysis for Epidemiology*
Author: Jos W. R. Twisk
Publisher: Cambridge University Press
Copyright: 2003
Pages: 301; paperback
ISBN: 0-521-52580-2
Price: $34.75

## Applied Longitudinal Data Analysis for Epidemiology

In *Applied Longitudinal Data Analysis for Epidemiology: A Practical Guide*, Jos W. R. Twisk provides an intuitive introduction to estimation techniques that are widely applied to longitudinal data by epidemiologists. Twisk covers ANOVA, MANOVA, generalized estimating equations estimators for longitudinal data, and random coefficient estimators. Rather than developing a rigorous introduction to each method, Twisk builds an intuitive foundation for each of the estimation frameworks and then uses these foundations to discuss how to choose an estimation framework and interpret the estimates. In addition, not only does Twisk discuss the available software for these estimators, but he compares the different implementations available in various packages, including Stata.

A complete table of contents, as well as online ordering information, can be found at **http://www.stata.com/bookstore/ldae.html**. You may also order using the enclosed bookstore order form.
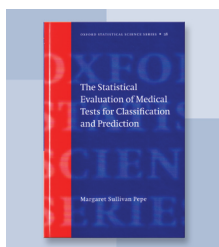
Title: *The Statistical Evaluation of Medical Tests for Classification and Prediction*
Author: Margaret Sullivan Pepe
Publisher: Oxford University Press
Copyright: 2003
Pages: 302; hardcover
ISBN: 0-198-50984-7
Price: $114.75

The Statistical Evaluation of Medical Tests for Classification and Prediction

The Statistical Evaluation of Medical Tests for Classification and Prediction by Margaret Sullivan Pepe begins with an overview of clinical studies: their purpose, the two basic types of sample selection, paired and unpaired observations, internal validity, and sources of bias. Eight datasets that serve as motivation for examples are then introduced. The next three chapters of the book discuss the different methods for measuring accuracy, including the receiver operating characteristic curve (ROC curve). The rest of the book discusses estimating these measures of accuracy, accounting for covariates, dealing with various forms of bias, and the phases of research for a medical test. Each chapter contains concluding remarks and exercises for readers to test their understanding of the material. Although the text itself does not show how to use Stata to reproduce results presented in the book, the book provides access to a web site that contains Stata datasets and programs for that purpose.

A complete table of contents, as well as online ordering information, can be found at **http://www.stata.com/bookstore/pepe.html**. You may also order using the enclosed bookstore order form.

Latest NetCourse™ schedule

The Stata NetCourses™ have been well-received by participants, as is reflected in the following remarks:

- "I thought the material was excellent. I was also impressed by the opportunity the students had to ask questions and the efforts made by the Course Leaders to answer them, regardless of how complicated the question."

- "I thought the NetCourse was superior because of the quality of the notes and the emphasis on intuition."

A NetCourse is a "lecture" posted to the NetCourse web site on Friday. After reading the lecture over the weekend or on Monday, participants can post questions and comments to the course discussion area. Course Leaders respond to the questions and comments on Tuesday and Thursday. The other participants are encouraged to amplify or otherwise respond to the questions or comments as well. The next lecture is then posted on Friday, and the process repeats. After the last lecture, discussion continues for a few additional weeks until the course concludes.

A brief summary of the upcoming NetCourses is listed below. For more details on how NetCourses work and for course syllabi, visit **http://www.stata.com/info/products/netcourse**.

An enrollment form for the upcoming NetCourses has been enclosed with the Stata News. You can also enroll online at **http://www.stata.com/info/products/netcourse/enrollment.html**.

NC-101. Introduction to Stata

NC-101 is designed to take smart, knowledgeable people and turn them into proficient interactive users of Stata. The course covers not just the obvious, such as getting data into Stata, but also covers detailed techniques and tricks to make you a powerful Stata user. From web update features and match-merging to using `by` groups and explicit subscripting, many of Stata's key concepts are explored.

Introduction to Stata
Prerequisites
Stata 8
Dates offered
September 12 – October 24
Course Leaders
James Hassell, Allen McDowell, and Derek Wagner
Enrollment Deadlines
September 8
Price
$95

NC-151. Introduction to Stata programming

NC-151 is intended for all Stata users. Through a combination of lectures, example applications, and carefully chosen problems, the course addresses the full range of methods and techniques necessary to be most productive in the Stata environment. Beginning with effective ways to organize both simple and complicated analyses in Stata, NetCourse 151 then moves into programming elements that can be used to work more efficiently. Key programming topics include macro processing, program flow of control, using do-files, programming ado-files, Monte-Carlo simulations, and bootstrapped standard errors.

Introduction to Stata programming
Prerequisites
Stata 8; basic knowledge of using Stata interactively
Dates offered
September 12 – October 24
Course Leaders
Allen McDowell and Kevin Crow
Enrollment Deadlines
September 8
Price
$125

Stata Users' Group meetings

First Stata Users' Group meeting in Germany announcement and call for papers

The first Stata users meeting ever held in Germany will take place at Humboldt University in Berlin on 12 August 2003, which is one day before the 54th session of the International Statistical Institute.

William Gould, President of Stata Corporation, will participate in the meeting, along with Ulrich Kohler, author of *Datenanalyse mit Stata*. This meeting provides a great opportunity for Stata users in Germany to meet each other, share their experiences, and learn more about the power of Stata from speakers and scientific papers.

The meeting is being organized by Dittrich & Partner (**http://www.dpc.de/**), the German distributor of Stata. For more information about attending the meeting or presenting talks or papers, please contact Anke Mrosek (**anke.mrosek@dpc.de**).

When: 12 August 2003, 10:00 – 4:30
Where: Humboldt University, Berlin
Cost: To be announced

9th annual UK Stata Users' Group meeting proceedings

The ninth UK Stata Users' Group meeting was hosted at the Royal Statistical Society in London on 19–20 May 2003. The meeting was organized by Sophia Rabe-Hesketh, Institute of Psychiatry, King's College London, and Stephen Jenkins, University of Essex, UK, with the administrative support of Timberlake Consultants, who also generously sponsored the speakers. William Gould, Roberto Gutierrez, and Chinh Nguyen from StataCorp attended. This year's meeting was distinctive because of the record number of presentations from users with an economics background (8 out of 18) and because of the international nature of the audience. For example, there were participants from Hungary, Germany, Norway, Luxembourg, and the United States, as well as the UK.

Abstracts for the presented papers and a detailed summary of the meeting can be found by visiting the Stata web site, **http://www.stata.com/support/meeting/9uk/**.

Dublin Stata Users' Group meeting proceedings

The first Dublin Stata users' meeting was held at Trinity College Dublin on 22 May 2003. The scientific organizers of the meeting were Ronan Conroy, Royal College of Surgeons in Ireland, and Alan Kelly, Trinity College Dublin, with some logistical help from Timberlake Consultants.

Abstracts for the presented papers and a detailed summary of the meeting can be found by visiting the Stata web site, **http://www.stata.com/support/meeting/1dublin/**.

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