



TIMBERLAKE CONSULTANTS | NEWS

SOFTWARE NEWS COURSES & SEMINARS CONFERENCES BOOKS PRESS ROOM FAQs AUGUST 2009

Software News

New Releases of Software

The last 12 months have seen many new releases of software. We are covering the following software packages (all available in our portfolio):

MicroFit 5		Announced - next 2 months
Siz®	NEW	Announced - late 2009
WinSolve™ 4		Announced - late 2009
OxMetrics™ 6		August 2009
@RISK 5.5		July 2009
TSP/OxMetrics™ 5.1		July 2009
Forecast Pro TRAC	NEW	August 2009
Stat/Transfer 10		August 2009
Stata® 11		July 2009
LINDO API		April 2009
RATS 7.2		April 2009
Mathtype 6.5		December 2008
PROGNOZ	NEW	Added to our portfolio in April 2009

What is new in Stata® 11

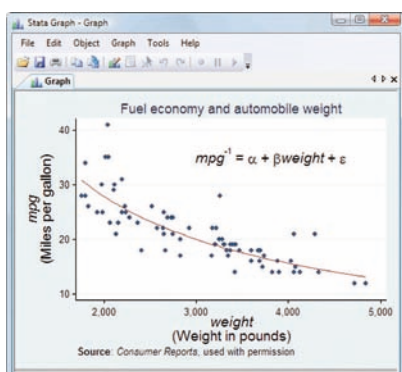
The exciting release of Stata 11 includes many and useful key features providing direct benefit to all users, whether specialising in advanced econometrics, finance, banking, portfolio analysis, social sciences, economics or medical biostatistics. A list of some of the new features available within Stata 11 are as follows:

Multiple Imputation

Stata's new **mi**-command provides a full suite of multiple imputation methods for the analysis of incomplete data and data for which some values are missing. **mi** provides both the imputation and the estimation steps. **mi**'s estimation step encompasses both estimation on individual datasets and pooling in one easy-to-use procedure. Features are provided to examine the pattern of missing values in the data. Flexible imputation methods are also provided, including five univariate imputation methods that can be used as building blocks for multivariate imputation, as well as multivariate normal (MVN).

Additional Graph Features

Graphs now support multiple fonts and symbols.



GMM (Generalized Method of Moments Estimation)

Stata's new **gmm** command makes GMM Estimation as simple and interactive as non-linear least squares regression.

Factor (categorical) Variables

Stata now handles factor (categorical) variables elegantly. You can now prefix a variable with **i.** to specify indicators for each level (category) of the variable. You can put a **#** between two variables to create an interaction—indicators for each combination of the categories of the variables. You can put **##** instead to specify a full factorial of the variables—main effects for each variable and an interaction. If you want to interact a continuous variable with a factor variable, just prefix the continuous variable with **c.** You can specify up to eight-way interactions.

Marginal means, adjusted predictions and marginal effects

A new postestimation command **margins** works after almost every estimation command in Stata and calculates predictive margins and least-square means among other statistics.

Competing Risks Regression

The command **sterreg** offers a built in way of handling survival or duration models when individuals face more than one kind of risk.

State Space Models

sspace command makes it easier to fit a wide range of multivariate time series models and automatically flip between stationary and non stationary models.

Dynamic Factor Models

Stata's new **dfactor** command estimates the parameters of dynamic-factor models by maximum likelihood. These models allow the dependent variables and the unobserved factor variables to have vector autoregressive (VAR) structures and to be linear functions of exogenous variables.

	coef.	Std. Err.	z	P> z	[95% Conf. Interval]
f					
f					
L1.	.2651932	.0568663	4.66	0.000	.1537372 .3766491
L2.	.4820398	.0624635	7.72	0.000	.3596136 .604466
ipman					
f	.3502249	.0287389	12.19	0.000	.2938976 .4065522
dsp					
f	.0746338	.0217319	3.43	0.001	.0320401 .1172276
ash1					
f	-.2177469	.0186769	-11.66	0.000	-.1811407 .-254353
unrate					
f	-.0676016	.0071022	-9.52	0.000	-.0815217 .-0536816
var(e.ipman)					
	.1383158	.0167086	8.28	0.000	.1055675 .1710641
var(e.dsp)					
	.2773808	.0188302	14.73	0.000	.2404743 .3142873
var(e.ash1)					
	.0913446	.0080847	11.27	0.000	.0752988 .1069903
var(e.unrate)					
	.0237232	.0017932	13.23	0.000	.0202086 .0272378

Multivariate GARCH

Stata's new **dvech** command estimates the parameters of multivariate generalized autoregressive conditional-heteroskedasticity (GARCH) models. Multivariate GARCH models allow the conditional covariance matrix of the dependent variables to follow a flexible dynamic structure. **dvech** estimates the parameters of diagonal vech GARCH models in which each element of the current conditional covariance matrix of the dependent variables depends only on its own past and on past shocks.

Unit Root Tests for Panel Data

The command **xtunitroot** performs now: Levin-Lin-Chu, Harris-Tzavalis, Breitung, and Im-Pesaran-Shin tests for unit roots; Fisher-type tests based on augmented Dickey-Fuller and Phillips-Perron tests; Hadri LM test for stationarity.

NEW Data Editor

Stata's new Data Editor makes viewing and manipulating your data easier than ever. New features and benefits include observation filtering.

Variables Manager

Variable name, label, storage type, format, value label, and any notes for the variables can be changed easily by clicking with your mouse.

Do-File Editor

The Do-File editor allows for syntax highlighting, code folding (the ability to hide blocks of code while you focus on the rest), the ability to work on multiple files simultaneously. No limit on file sizes.

PDF Manuals

Fully integrated as part of the new Stata 11 help system, every copy of Stata 11 will come with PDF Manuals. Printed manuals will still be available.

Stata/MP

Stata/MP is the fastest and largest version of Stata. Stata/MP, supporting up to 64 processors. Stata/MP is the Stata version that runs on multiprocessor and multicore computers. Among the new commands and features that benefit from parallelization are `sspace` and `dfactor`, `margins`, `gmm`, `xtunitroot`, and many aspects of multiple imputation.

StataCorp is now offering maintenance for Stata licenses. Maintenance will include new upgrades.

What is new in Stat/Transfer 10

Stat/Transfer has provided fast, reliable, and convenient data transfer between popular software packages. Stat/Transfer knows about statistical data - and many users of Stata use it - it handles missing data, value and variable labels and all of the other details that are necessary to move as much information as is possible from one file format to another. Stat/Transfer provides both an easy-to-use menu interface and a powerful batch facility.

Stat/Transfer Version 10 has added full support for the following formats:

- Matlab Seven Datasets
- SPSS Version 17
- Statistica Versions 7-9 (on Windows)
- SAS Version Nine
- Triple-S Survey Interchange Format

Stat/Transfer Version 10 has a number of new or improved features.

- **International character set support.** Stat/Transfer can now read datasets in any character set, including multibyte, far-eastern, and Unicode characters.
- **Expanded Options.** The option screens have been expanded and reorganized to allow much greater control over the transfer process and the user interface.
- **Long variable labels for Stata.** Variable labels longer than Stata's eighty character maximum are now written to Stata both as truncated variable labels and, in full, as Stata notes.
- **Automatic program generation.** You can specify that a program for the command processor be written when a transfer is carried out using the Stat/Transfer user interface. This enables you to reproduce your transfer operation either from the user interface or as a batch job from your operating system. It also allows you to precisely document how your transfer was performed.
- **Improved data viewer.** The data viewer has been improved and will now display long strings, international character sets, variable characteristics and value labels.
- **Value label browser.** You can now examine value labels for each variable on the Variables tab.
- **Quick variable type changer.** You can change the types of many variables at a time, using wildcards, ranges, or lists.

- **Automatic transfer logging.** You automatically write a log file to disk every time you do a data transfer. The log file will contain detailed information about what has occurred during your transfer. By default this will go to the same directory as your output file.
- **New user interface, including one for Linux.** Linux and, soon, Solaris have a new graphical user interface. This newly-designed interface is now the same on Windows, OS-X and Linux.

What is new in OxMetrics™ 6.0

OxMetrics™ is a modular software system providing an integrated solution for the econometric analysis of time series, forecasting, financial econometric modelling, or statistical analysis of cross-section and panel data. The OxMetrics modules are: Ox Professional™, PcGive™, STAMP™, G@RCH™, SsfPack™, TSP/OxMetrics™. Four of these modules have been grouped in a single product OxMetrics™ Enterprise. This is a single product that includes and integrates all the important components for theoretical and empirical research in econometrics, time series analysis and forecasting, applied economics and financial time series: Ox Professional, PcGive, G@RCH, and STAMP.

Improvements include:

The main improvements of OxMetrics 6.0 are related to PcGive and G@RCH. The new releases of Ox and STAMP bring only minor improvements and bug fixes. Ox now supports of recession shading into graphs. Other improvements are minor or bug fixes

PcGive™ 13

PcGive provides the latest econometric techniques, from single equation methods to advanced cointegration, static and dynamic panel data models, discrete choice models and time-series models such as ARFIMA, and X-12-ARIMA for seasonal adjustment and ARIMA modelling.

New features include:

Markov-switching models (see article on page 6)

The main addition in the new version of PcGive™ is estimation and forecasting with Markov-switching models. Such models allow coefficients to be regime dependent, which is combined with the estimation of transition probabilities between regimes. In light of the current recession, which ended a long period of stability in the macro economy, it is likely that such models will see renewed interest.

Automatic model selection using Autometrics™

Autometrics is a general_to_specific automatic model selection procedure. The main difference between Autometrics™ and other automatic model selection procedures like Stepwise Regression is that it considers the whole model space and hence is less affected by potential complex interrelationships in the independent variables. Autometrics use three criteria for model reduction (general_to_specific): statistical significance of the regressors, diagnostic testing and encompassing.

New features in Autometrics include:

- Autometrics added to cross-section modelling
- Autometrics for binary logit/probit and for count data
- Autometrics can impose sign restrictions on search space. In a dynamic model these are long-run restrictions. Effectively, models with 'the wrong signs' can be omitted from the search space. Optionally, variables can be forcefully removed if they are significant with the wrong sign.

G@RCH™ 6.0

G@RCH is a module dedicated to the estimation and forecasting of univariate ARCH-type models. Models covered include: Conditional Mean (ARMA, ARFIMA, ARCH-in-Mean, Explanatory Variables); Conditional Variance (GARCH, EGARCH, GJR, APARCH, IGARCH, RiskMetrics, FIGARCH, FIEGARCH, FIAPARCH, HYGARCH, Explanatory Variables); Value-at-Risk; Realized Volatility. One of G@RCH's main new features is a new module called RE@LIZED whose aim is to provide a full set of procedures to compute non-parametric estimates of the quadratic variation, integrated volatility and jumps using intraday data.



What is new in WinSolve™ 4

WinSolve is a 32 bit Windows program for solving (nonlinear) models. The prime emphasis of the program is on user friendliness and graphical presentation, making it ideal for new users. However, it contains all the facilities needed by the professional model builder. It is also useful to the academic community both for research as well as teaching.

New features include:

WinSolve Version 4 incorporates the following substantial new features:

- Production of true fan charts by stochastic simulation
- Linear-quadratic optimal control
 - commitment solution
 - time-consistent Markov-perfect solution
- General non-linear optimal control solutions.

What is new in MathType 6.5

MathType is a powerful interactive tool for Windows and Macintosh that allows creating mathematical notation for word processing, web pages, desktop publishing, presentations, and for TeX, LaTeX, and MathML documents.

Improvements include

- Equations Everywhere and Anywhere™: Up until now, MathType has been thought of mostly as a tool that works with Microsoft Word and PowerPoint. But it has always been much more than that. You can label graphs with equations, create equation images for websites, blogs, wikis, export equations to TeX or MathML, and much more.
- Enter equations in TeX/LaTeX directly in Word: If you know the TeX type setting language, you can type it directly into your Word document. When you are done, the TeX code will be converted to a MathType equation. The TeX Toggle keyboard shortcut allows you to toggle between TeX and MathType views of the equation.
- New keyboard shortcuts in Word to open equations for editing: Many of our customers like to use the keyboard. Now you can open an equation next to the insertion point using a keyboard shortcut. Together with our new TeX Toggle feature, you can now enter and edit equations completely from the keyboard without leaving Word.
- New translators for Maple, Mathematica, Physics Forum and more: As part of our "Equations Everywhere and Anywhere" effort, we have added new translators for many applications and websites.
- MathML Import: Now you can import mathematics defined using MathML from the many applications that produce it. MathML code can be either in the new MathML Clipboard Format that is supported by a growing number of mathematical and scientific applications or plain text such as from an XML editor, for example. The MathML can be imported via cut and paste or drag and drop.

MathType 6.5 equations are compatible with MathType 6.0 and 5.0 equations so you can continue to work with other MathType users even if they haven't upgraded yet. MathType 6.5 will also retain any changes you've made in your current version of MathType, including keyboard shortcuts, toolbars, preferences, etc.

What is new in LINDO API 6.0

The LINDO API is a library of optimization solvers and mathematical programming tools and it allows you to plug LINDO solvers right into customized applications and mathematical programs that you have written. LINDO API can also be run as a MATLAB callable function.

New features include:

New Stochastic Programming Interface

- Modelling and optimization with uncertain elements through multistage stochastic linear, nonlinear and integer stochastic programming (SP).
- Extensive set of API functions to setup and solve SP models.

Statistical Sampling API

- Extensive API functions to sample directly from various statistical distributions,
- Variance reduction with Latin-Hyper-Cube and Anti-thetic variates sampling.

Simplex Solver Improvements

- Large linear models solve an average of 20% faster with improved primal and dual solvers.

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MIP Solver Improvements

- Substantial improvements in all heuristics for finding close to optimal solutions quickly.
- Significant improvements in cuts for certain types of special model structures.

Global Solver Improvements

- Significant improvement in the handling of nonlinear models with quadratic terms, especially non-convex quadratic expressions.

What is new in RATS 7.2

RATS (Regression Analysis of Time Series), a comprehensive and specialist econometrics and time-series analysis software package

Improvements include:

- Higher speed for Windows PCs
- 64-bit version is available for Windows allowing to handle much larger data sets on systems running 64-bit XP or Vista
- X12-ARIMA is now available (Pro Version). Almost all features of the Census X12-ARIMA seasonal adjustment methodology have now been incorporated into the Pro version of RATS.
- FRED Database Access (Pro Version) allows direct access to the St. Louis Federal Reserve Bank's FRED database
- New options for the Box-Jenkins methodology. New options for RegARIMA modelling, where the emphasis is on the regression model rather than the time series model for errors.
- Dynamic Stochastic General Equilibrium models instruction has improved computational and error-checking capabilities, and a new option for exogenous shocks models.
- New menu-driven wizards for running unit root tests, density estimation, and non-parametric regressions.

What is new in MicroFit 5

Microfit 5.0 is an interactive, menu-driven program with a host of facilities for estimating, hypothesis testing, forecasting, data processing, file management, and graphic display. It is a major advance over Microfit 4 and offers a unique built-in interactive, searchable econometric text. It provides users with technical, functional and tutorial help throughout the package. The package is easily usable at different levels of technical sophistication.

Improvements include:

- User interface has been completely revamped to improve accessibility and provide clear instructions to users
- Much enhanced graphic module allows numerous graph types and an unrestricted number of plots per screen
- New version can run regressions using up to 102 regressors and allows 5,000,000 observation data points
- Much enhanced graphic module allows numerous graph types and an unrestricted number of plots per screen
- Most files created using Microfit 4.0 can be used in Microfit 5.0
- Enhanced help files now included within the software package
- Time series dimension of observations can be adjusted dynamically
- Allows Excel files to be imported and exported
- Additional unit root tests such as Phillips-Perron, ADF-GLS, ADF-WS, and ADF-MAX
- Analysis of cointegrating models, with and without weakly exogenous variables (VARX and VECMX models), essential for modelling of small open economies.
- Forecasting, impulse response analysis, persistence profiles and error variance decomposition for VARX models
- Principal components and canonical correlation analysis
- Nonparametric density estimation (Gaussian and Epanechnikov kernels with Silverman rule of thumb and least squares cross-validation band widths)

- Bootstrapped critical values for tests of over-identifying restrictions and cointegrated models
- Multivariate GARCH models, allowing estimation with Gaussian and multivariate t-distributed shocks
- Small sample simulation of the critical values of unit root and cointegration tests
- Bootstrapped error bounds for impulse responses persistence profiles and error variance decompositions for VAR, VARX, and cointegrated VAR and VARX options

What is new in TSP/OxMetrics™ 5.1

TSP is an econometric software package with convenient input of commands and data, all the standard estimation methods (including non-linear), forecasting, and a flexible language for programming your own estimators. TSP is available as an add-on to OxMetrics. TSP and TSP/OxMetrics™ offers a wide variety of facilities, such as: single-equation estimation (using a variety of techniques), non-linear 3SLS, GMM and FIML, time series methods (Box-Jenkins, Kalman-filter estimation, vector autoregressive models, etc.), financial econometrics (ARCH, GARCH, GARCH-M, including logarithmic versions), general maximum likelihood, qualitative dependent variable estimation, and panel data estimation. Extensive libraries of TSP procedures are available free of charge.

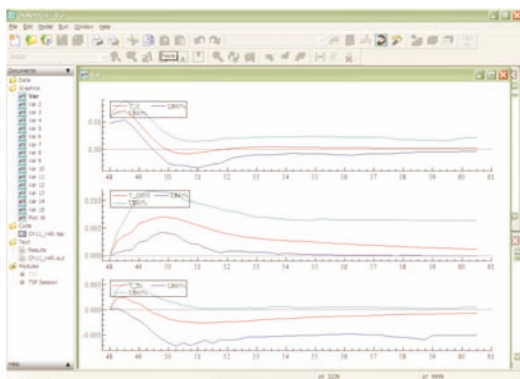
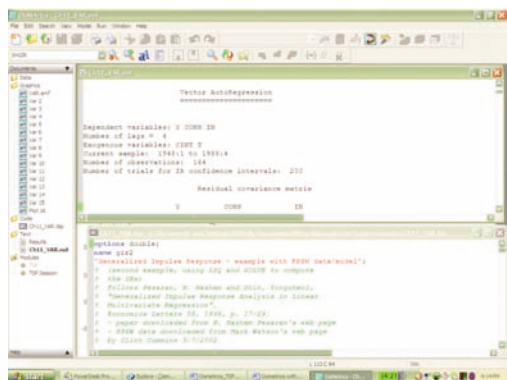
Improvements include:

In addition to the OxMetrics™ interface, a number of enhancements have been made to this release of TSP. The major and minor enhancements to various procedures are listed here:

- VAR - Generalized Impulse Response and improved plotting
- LSQ, ML, and PROBIT - Panel-robust (clustered) standard errors
- ANALYZ for functions of series, improved output and options
- LP - new linear programming procedure
- SORT - speed enhancements
- LAD and LMS - enhanced iteration, looking for multiple solutions
- LIML - added the log likelihood (used for testing)
- FORM - ability to create unnormalized equations
- New stepsize option for nonlinear procedures, improving iteration behavior.
- GRAPH - circle plots (where importance of each point is shown) added

There are also a number of general enhancements: greatly improved Excel spreadsheet reading with more versions and multiple sheets, reading of Stata.dta files up to Version 10, ability to label matrices rows and columns when they are printed, more informative output from SHOW SERIES, and more efficient long programs with loops.

Sample screens for VAR regression of income on consumption in TSP/OxMetrics™

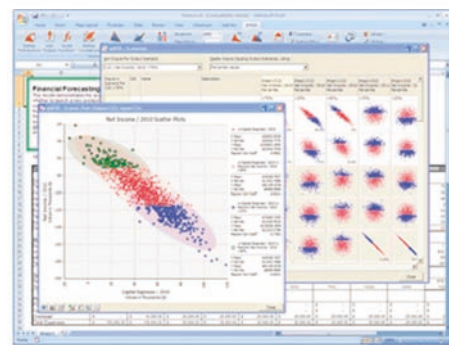
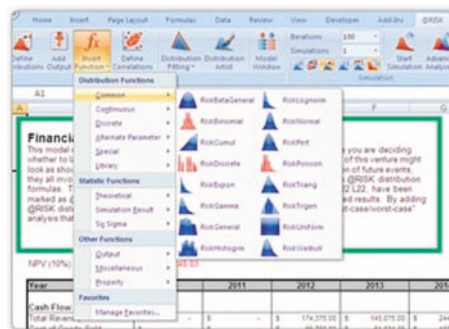


@RISK 5.5

What's New:

@RISK 5.5 brings a range of new features including new functions, graphs, interface improvements, simulation archiving and more. In addition, @RISK 5.5 has been translated into Spanish, Portuguese, German, French, and Japanese. Current @RISK 5.0 users will benefit from faster simulations - **2x to a remarkable 20x times faster than before** - as well as new scatter plots for scenario analyses, a freehand distribution artist, and an Excel-style Insert Function dialog and graphs.

RISK 5.5 also brings a range of new features to improve your analysis, save time, and encourage systematic adoption of risk analysis across your organisation.



New Software

SIZ®

SIZ® is a new package developed by Cytel Inc. Cytel Inc. specializes in software and services for the design of clinical trials and specialized statistical applications for the biopharmaceutical, medical, academic and government research markets. Statistical power analysis and sample size determination are crucial elements of study design. A study which has too few subjects may produce inconclusive results. But, does one want to waste scarce resources on a study which is larger than necessary. SIZ (pronounces "size") will be the future of clinical trial design. Its first version, maybe seen to directly competing with nQuery. nQuery is generally used to do simple sample size calculations, however SIZ will allow the ability to go much further by doing both analysis and simulation. SIZ will also have bioequivalence capabilities, which are not found in nQuery. The cost of SIZ £140/year (both commercial and academic).

PROGNOZ

PROGNOZ Inc appointed Timberlake Consultants as their exclusive partner in the UK and Ireland. PROGNOZ develops Business Intelligence solutions that help organisations ranging from large corporations to government agencies and universities to gain valuable insight into complex data and improve the efficiency of their operations. Contact us if you would like a presentation or discuss your requirements.

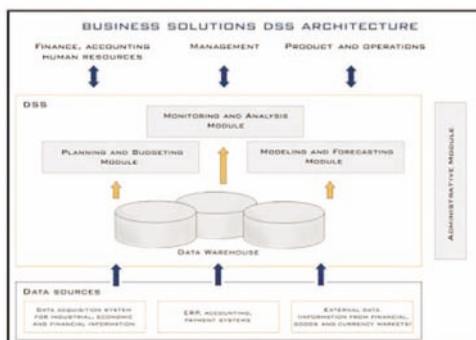
We offer consulting and implementation of applications as well as the software developed by PROGNOZ. The software providing the foundation for all applications is the PROGNOZ 5 Platform.

PROGNOZ 5 Platform

The PROGNOZ 5 Platform is a modular software package with data storage, monitoring, reporting, analytical, modelling and forecasting capabilities. The modular design means that the platform is easily customizable to fit the needs of your enterprise in a fraction of the time, at a fraction of the cost.



The PROGNOZ platform offers a modular architecture, i.e. one can pick and choose the functionality that will best fit one's needs. The users do not have to purchase modules that are not required by their application. The modules are: Data Integration & Storage, Analysis & OLAP, Modeling and Forecasting, Monitoring & Reporting, Web Access and Administration & Security.



PROGNOZ 5 Decision Support System (DSS)

Built upon the PROGNOZ 5 platform, DSS is flexible by design and engineered for ALL industries. The modular approach to Business Intelligence allows tailoring for the specific industrial and organisation requirements. Pre-existing systems include: Enterprise Resource Planning (ERP), Payment and Accounting, Customer Relationship Management (CRM), Sales and Marketing and External Databases. The DSS has built-in compatibility with different comprehensive management systems for enterprises in various sectors such as mySAP Business Suite (SAP R/3) and other ERP-systems.

The PROGNOZ technology is flexibility, and the PROGNOZ 5 Platform easily adapts to the needs of ALL industries. Though the standard PROGNOZ 5 Platform is applicable to a vast range of industries, to date, it was especially customised to create industry-specific solutions for agriculture, automotive, banking & finance, energy & utilities, government, healthcare, small business, trade & transportation and tourism. The aim is to allow users to produce exactly what they need so that they can concentrate on the results and minimise the time spent putting together meaningful reports.



Forecast PRO TRAC

Forecast Pro TRAC is the newest member of the Forecast Pro software. TRAC is the perfect solution for a broad range of business forecasting needs including demand forecasting, team forecasting or forecasting and reporting in support of your organisation's SETOP process. Forecast Pro TRAC is built on the Forecast Pro Unlimited framework and combines all of the forecasting, graphing, reporting and adjustment capabilities found in Forecast Pro Unlimited with the advanced data visualization and analytic tools you need to execute a complete world-class forecasting process.

With Forecast Pro TRAC you can...

Convert your forecasts to any unit of measure. Forecast Pro TRAC allows you to view your data and forecasts in any unit of measure you wish. A simple drop-down menu lets you instantly convert between those units of measure that are important to your business—for instance dollars, units, cases, pounds, etc.

Rearrange your hierarchies. With Forecast Pro TRAC's powerful "shuffling" capability, you can rearrange your hierarchy on-the-fly. Need to generate a report showing product-level forecasts broken out by customer and then create another report showing customer-level forecasts broken out by product? No problem!

Focus on the items that need attention. With Forecast Pro TRAC's comprehensive exception reporting, you can automatically flag exceptions, saving you from manually reviewing every forecast. Exception reports allow you to analyze the forecasts you are currently working on as well as previously completed and archived forecasts.

Monitor your forecasting performance. Forecast Pro TRAC maintains an archive of your previous forecasts (including the statistical forecast as well as the adjusted forecast) so you can compare forecasts vs. actuals. With just a quick glance at Forecast Pro TRAC's waterfall reports you can zero in on what's working and what isn't.

Consolidate your team's forecasts. Forecast Pro TRAC allows you to break large forecasting projects into smaller pieces that can be worked on separately and then reassembled into consolidated forecasts. For example, if three demand planners are responsible for three different geographical areas they can work independently and once they've completed their work, the forecast can be consolidated for further review and manipulation.
forecastpro.com



Timberlake Consultants Ltd also provide demonstrations of Forecast Pro and Forecast Pro TRAC through webinars (i.e. online seminars). If you want to book a webinar or for further information, please email: training@timberlake.co.uk.

Forecast Pro TRAC - FREE Seminar 28 August 2009 - 10H00 - 13H00 Cass Business School, London

Timberlake Consultants are inviting you to attend a 1/2 day FREE seminar in Central London. The aim of the seminar is to demonstrate with real economic and industry data the new capabilities offered by Forecast Pro TRAC. Participants are invited to bring along their own data – there will be a specific session dedicated to demonstrating the software with the participants' data.

After the seminar finishes, participants are invited to stay for lunch and we will be available to discuss your requirements and demo Forecast Pro TRAC on your data. Data should be sent to us at least 5 days prior to the seminar.

Regime Switching Models in PcGive™

by Jurgen A. Doornik

The main addition in the new version of PcGive™ is estimation and forecasting with Markov-switching models. Such models allow coefficients to be regime dependent, which is combined with the estimation of transition probabilities between regimes. In light of the current recession, which ended a long period of stability in the macro economy, it is likely that such models will see renewed interest.

PcGive™ distinguishes between two types of Markov-switching models:

Markov-switching dynamic regression models (MS or MS-DR) and Markov-switching autoregressions (MS-AR or MS-ARMA).

In MS-DR the lags of the dependent variable are added in the same way as other regressors. An example is:

$$y_t = \nu(s_t) + \alpha y_{t-1} + \mathbf{x}'_t \beta + \epsilon_t, \epsilon_t \sim N[0, \sigma^2], \quad (1)$$

where s_t is the random variable denoting the regime. If there are two regimes, we could also write:

$$\begin{aligned} \text{Regime 0: } & y_t = \nu(0) + \alpha y_{t-1} + \mathbf{x}'_t \beta + \epsilon_t, \\ \text{Regime 1: } & y_t = \nu(1) + \alpha y_{t-1} + \mathbf{x}'_t \beta + \epsilon_t, \end{aligned}$$

which shows the regime dependent intercept more clearly.

In the MS-AR model the lag polynomial is applied to the dependent variable in deviation from its mean:

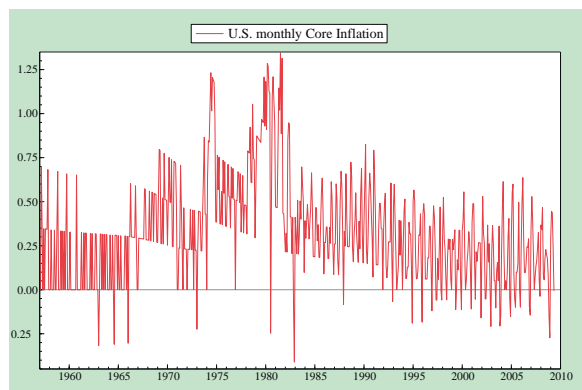
$$y_t - \mu(s_t) - \mathbf{x}'_t \gamma = \rho(y_{t-1} - \mu(s_{t-1}) - \mathbf{x}'_{t-1} \gamma) + \epsilon_t. \quad (2)$$

Without regime switching both specifications are identical: one can be rewritten as the other. This is not the case for Markov-switching models. The MS-AR model is sometimes called the Hamilton model.¹

PcGive™ allows any parameter to be regime dependent, including the variance. In an MS-ARMA model all ARMA parameters are either regime dependent or not.

The new chapter in PcGive™ Volume III illustrates the regime-switching models to estimate business-cycle models for U.S. quarterly GNP. Here we use U.S. core inflation (Urban CPI excluding energy and food, not seasonally adjusted).

The following graph shows monthly percentages of core inflation:



Unfortunately, the CPI is only reported with one decimal point, and there is very limited information in the early part of the sample.

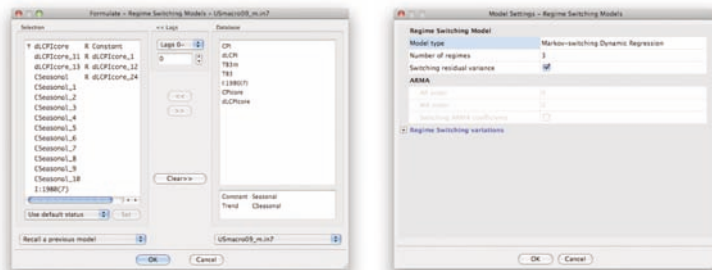
The graph shows that U.S. core inflation displayed persistent changes in the post war period. Periods with high means and low means, high persistence and low persistence, high volatility and low volatility followed each other. The significance of these changes is the subject of an intensive and ongoing debate among practitioners and academics.²

Markov regime switching models provide an elegant way to summarize the evolution of changing characteristics of time series processes. Specification, estimation, testing, interpretation and forecasting for Markov-switching models only requires a minimum effort using the new PcGive™ as we show in this note.³

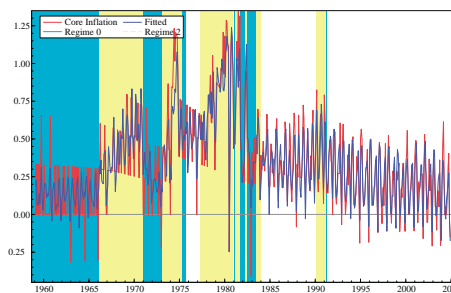
Some older models for seasonally adjusted inflation estimate an MS-AR model with three regimes and two lags.⁴ However, we find that we need to allow for lags up to 24 months, which rules out the MS-AR specification.⁵ We use centred seasonals, one dummy variable for July 1980, and some of the lags have a regime dependent coefficient. Finally, the variance is also regime dependent:

$$y_t = \alpha_0(s_t) + \alpha_1(s_t)y_{t-1} + \alpha_{11}y_{t-11} + \alpha_{12}(s_t)y_{t-12} + \alpha_{13}y_{t-13} + \alpha_{24}(s_t)y_{t-24} + \text{dummy} + \text{seasonals} + \epsilon_t, \epsilon_t \sim N[0, \sigma^2(s_t)].$$

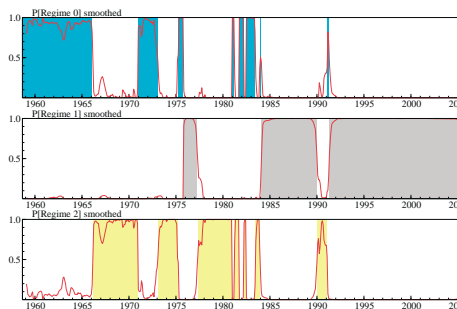
Estimation is over 1959(2) to 2004(12). The following two screen captures show model formulation under OS X:



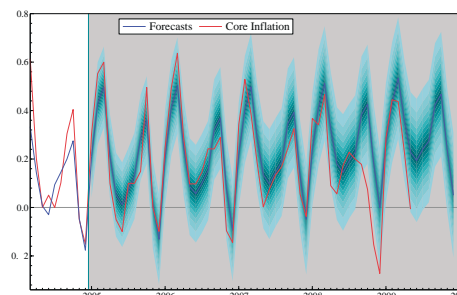
The next figure shows the actual and fitted values from the estimated model, as well as the regime classification based on the smoothed transition probabilities. Regime 0, in light blue, corresponds to periods of stable and low inflation, predominantly in the early part of the sample. Regime 2, in yellow, are periods of rising and persistent inflation in the period of Great Inflation, while regime 1, the remainder, covers most of the sample after the Great Moderation of the 1980s with low and less volatile inflation. The residual standard error in regime 1 is about 60% of that of the other two regimes, while the intercept in regime 1 is less than half that of the other two.



The smoothed transition probabilities for this MS-DR(3) model can also be graphed separately, with regime 1 in grey:



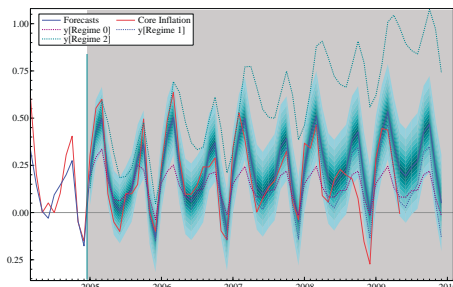
The five-year ahead forecast performance of this model is shown in the next figure:





For about 3 and a half year ahead the model forecasts very well. After July 2008 the forecasts start to break down, before recovering in early 2009. An over-estimate for mid 2009 looks then again likely.

Within each regime the model is linear, and the forecasts are a weighted average of the forecasts for the three regimes. This is depicted in the next figure, where the regime-specific forecasts are shown with dotted lines. The probability to be in regime 1 is high, but somewhat diminishing further into the future.



¹ See Chapter 22 in Hamilton (1994), *Time series Analysis*, Princeton University Press. Further references are given in PcGive™ Volume III.

² Cecchetti, Hooper, Kasman, Schoenholtz, and Watson (2007), *Understanding the evolving inflation process; Report U.S. Monetary Policy Forum* evaluate findings in the literature for the period preceding the credit-crisis.

³ PcGive Regime Switching models are not based on the MS-VAR class for Ox 3.4 (Krolzig, 1994). The PcGive interface provides some additional flexibility and new algorithms, but only for single equation modelling.

⁴ See, e.g., Garcia and Perron (1996), *An Analysis of the Real Interest Rate under Regime Shifts*, *Review of Economics and Statistics*.

⁵ The dimension of the state vector would be.

User Group Meetings and Seminars

7th OxMetrics User Conference 14 – 15 September 2009 Cass Business School, London

The conference will provide a forum for the presentation and exchange of research results and practical experiences within the fields of computational and financial econometrics, empirical economics, time-series and cross-section statistics and applied mathematics. The conference programme will feature keynote presentations, technical paper sessions, workshops, tutorials and panel discussions. Some of the OxMetrics' developers (Jurgen A. Doornik, Andrew Harvey, David F. Hendry, Siem J. Koopman and Sébastien Laurent) will be present as keynote speakers. Please see below for the list of papers. There will also be a round table discussion with OxMetrics™ developers for participants to put their comments to the development team and suggest improvements.

The conference is open to all those interested in econometrics, not just to OxMetrics™ users, from academic and non-academic organisations.

Agenda

Monday, 14 September 2009

8.30–9.00: Registration + Coffee/Tea

Session 1: Model Selection

Chairperson: Jurgen Doornik

09.00–10:30

Forecasting, Model Averaging and Model Selection
James Reade (Department of Economics, University of Oxford).

Model Selection when there are Multiple Breaks
Jennifer L. Castle, Jurgen A. Doornik and David F. Hendry

A Combined Approach of Experts and Autometrics to Forecast Consumption: An Application to Spanish Data.
José Ramón Cancelo, Antoni Espasa, and Jurgen A Doornik (Nuffield College, Oxford)

10:30–11.00: Coffee/Tea Break

Session 2: High Frequency

Chairperson: Ana-Maria Fuertes

11.00–12:30

Predicting Realized Volatility for Electricity Prices Using Unobservable Component Models

Erik Haugom (Lillehammer University College, Norway), Sjur Westgaard (TOH-HIST, Trondheim, Norway), Gudbrand Lien (Lillehammer University College, Norway), Per Bjarte Sollibakke (Lillehammer University College, Norway).

A Note on Jumps and Price Discovery in the US Treasury Market
Ana-Maria Dumitri (Bergamo University, Italy and CEA, London, UK)

Exploiting Intra-Day Prices, Jumps and Subsampling in Daily VaR Predictions

Ana-Maria Fuertes (Cass Business School, London, UK) and Jose Olmo (City University, London, UK).

12.30–14.30 Lunch

Session 3: Estimation

Chairperson: Sebastien Laurent

14.30–15.30

Local kernel Density Estimation from Time Series Data

Andrew C. Harvey and Vitaliy Oryshchenko (Faculty of Economics, University of Cambridge, UK)

Robust Estimation of CCC and DCC GARCH models

Kris Boudt, Jon Danielsson and Sébastien Laurent

15.30–16.00 Coffee break

Session 4: New OxMetrics Development: The Discrete Choice Model

Chairperson: Giovanni Urga

16.00–16:45

DCM 2.0: An Ox Package for Estimating Demand Systems of Discrete Choice in Economics and Marketing

Matias Eklof (Department of Economics, Uppsala University, Sweden) and Melvyn Weeks (Faculty of Economics, University of Cambridge, UK)

Session 5: New OxMetrics Developments

Chairperson: Giovanni Urga

16.45–18:00

Round Table Discussion with OxMetrics Developers

19.00: CONFERENCE DINNER

Agenda contd. ▶

► Agenda (contd)

Tuesday, 15 September 2009

Session 6: Testing

Chairperson: Lorenzo Trapani

09:00–10:30

Testing the Invariance of Expectations Models of Inflation

Jennifer L. Castle, Jurgen A. Doornik, David F. Hendry and Ragnar Nymoen

A Robust Version of the KPSS Test Based on Ranks

Matteo M Pelagatti (Università degli Studi di Milano-Bicocca) and Pranab K Sen (University of North Carolina)

Cointegration versus Spurious Regression and Heterogeneity in Large Panels

Lorenzo Trapani (Cass Business School, London, UK)

10:30–11:00: Coffee/Tea Break

Session 7: Factors/Unobservable Components

Chairperson: Siem Jan Koopman

11:00–12:00

Dynamic Econometric Models and Errors in Variables

Andrew Harvey (Faculty of Economics, Cambridge University, UK)

Dynamic Factor Analysis by Maximum Likelihood

Borus Jungbacker (VU University Amsterdam), Siem Jan Koopman (VU University Amsterdam) and Michel van der Wel (Erasmus University Rotterdam, ERIM, CREATES)

12:00: LUNCH/END OF CONFERENCE

Registration is £84.00 plus VAT and includes the conference dinner.

For registration or request of further information, please visit www.timberlake.co.uk or email ashley.dyer@timberlake.co.uk

Agenda

Thursday, 10 September 2009

08:45–09:25 Registration and Coffee/Tea

09:25–09:30 Introduction and welcome
(Roger Newson and Stephen Jenkins)

09:30–10:00 Selection–endogenous ordered probit and dynamic ordered probit models (Massimiliano Bratti and Alfonso Miranda)

10:00–10:30 Robust principal component analysis in Stata (Vincenzo Verardi)

10:30–11:00 Three models for combining information from causal indicators (Maarten Buis)

11:00–11:30 Coffee/Tea

11:30–12:00 To the vector belong the spoils: circular statistics in Stata (Nicholas J. Cox)

12:00–12:30 Exporting and importing Stata genotype data to and from PHASE and HaploView (Chuck Huber)

12:30–13:00 Improving the output capabilities of Stata with Open Document Format xml (Adam Jacobs)

13:00–14:00 Lunch

14:00–14:15 The economics of Statalist exchanges (Martin Weiss)

14:15–14:30 Spatial indices of residential segregation (Maurizio Pisati)

14:30–14:45 Summarising the results of simulation studies (Ian White)

14:45–15:00 Rating scale analysis (Michael Glencross)

15:00–15:15 Funnel plots for institutional comparisons (Rosa Gini and Sylvia Forni)

15:15–15:30 Decomposition of inequality change into pro-poor growth and mobility components: `dsginideco` (Stephen P. Jenkins and Philippe Van Kerm)

15:30–16:00 Coffee/Tea

16:00–16:20 Education inequality in Latin America and the Caribbean: a socioeconomic gradients analysis using Stata (Roy Costilla)

16:20–16:40 A dynamic panel data tobit approach to the study of household mortgage debt in Italy (Giovanni Bruno and Elena Giarda)

16:40–17:30 Multiple-imputation analysis using Stata's new `mi` command (Yulia Marchenko)

17:30 End of formal sessions. Optional adjournment to pub, followed by dinner at restaurant (at participant's own cost)

15th London Stata User's Meeting 10 – 11 September 2009 Cass Business School, London

The London meeting is the longest-running series of Stata users meetings. The meeting is open to all interested. In past years participants were from Britain, Ireland, other European countries, USA, and Australia. StataCorp will also be represented. For the detailed agenda, please see below. The meeting will include the usual "wishes and grumbles" session at which you may air your thoughts to Stata developers and (at additional cost) an informal meal at a London restaurant on Monday evening.



Friday 11th September 2009

09:30–10:00 Contour enhanced funnel plots for meta-analysis
(Tom Palmer)

10:00–10:30 Homoskedastic adjustment inflation factors in model selection
(Roger B. Newson)

10:30–11:00 Implementing econometric estimators with Mata
(Christopher F. Baum)

11:00–11:30 Coffee/Tea

11:30–13:00 Flexible parametric alternatives to the Cox model
(Paul Lambert and Patrick Royston)

13:00–14:00 Lunch

14:00–15:30 Recent developments in output processing (Ben Jann)

15:30–16:00 Coffee/Tea

16:00–17:15 Report to users, wishes and grumbles
(Bill Gould, StataCorp)

17:15 Close

The registration fee is £75.00 plus VAT for both days; £50 plus VAT for one day.

For registration or request of further information, please visit www.timberlake.co.uk or email: training@timberlake.co.uk

Timberlake Consultants Technical Support

Timberlake Consultants offers technical support for Stata, EViews, OxMetrics as well as for most of the other software distributed. We are pleased to announce a new addition to the technical support team, namely George Bagdatoglou. George holds a PhD in Economics and 10 years experience in econometrics in academic research and industry. He is expected to address both software-specific (i.e. Stata, EViews, OxMetrics, etc) and general econometric questions (i.e. "what is cointegration analysis", "why one should apply Instrumental Variables estimation", "what is general-to-specific approach", etc). Timberlake Consultants welcome you to submit your questions at: support@timberlake.co.uk



Timberlake Consultants Training and Consultancy

Timberlake Consultants Limited has a strong team of consultants to provide training (public attendance or onsite) and consultancy projects requiring the Stata, EViews, OxMetrics, SPSS, GAUSS, Matlab, SAS or any other software. The main language used in the courses is English. However, we can also provide some of the courses in other languages, e.g. French, Dutch, Italian, German, Spanish, Portuguese, Polish and Japanese.

We organise, regularly, public attendance courses in London (UK) and the East and West coast of the USA. Details on dates are found on

<http://www.timberlake.co.uk>. We also offer tailored on site training courses. The most popular courses are described below:

The Practice of Econometrics with EViews (4-days)

The course aims to provide delegates with a practical and systematic approach to econometric modelling business and economics time series data. Topics that will be covered include the Box-Jenkins methodology, cointegration and error correction models, VAR analysis and panel data analysis. These methodologies have been proven very useful in modelling and forecasting business and economic time-series data. The course is both theoretical and practical with greater emphasis on the latter. Demonstration of the methodologies and models will be on EViews, an easy-to-use, object-oriented econometrics software.

An Introduction to Time Series Analysis and Forecasting with Stata (4-days)

This course provides an introduction to time series analysis and forecasting with Stata. It assumes little mathematical background on the part of the participants or experience with Stata. The course will review important time series analysis and forecasting concepts including Box-Jenkins ARIMA, Time Series Regression, and GARCH Modelling and provide hands-on experience in Stata.

Applied Econometrics with Stata (4-days)

This course focuses primarily on cointegration analysis and panel data analysis. It will discuss how to deal with non-stationary series, trends, cointegrated variables and how to combine time-series with cross-sectional data. The course will also cover duration and discrete choice models. The course is aimed at researchers and forecasters with some background in econometrics and Stata and who are interested in modelling and forecasting business and economic time-series in Stata.

Multilevel Modelling using Stata (1-day)

The course is aimed at researchers who are interested in multilevel modelling in Stata. The course is both theoretical and practical. Participants should have some knowledge of Stata as all the applications will be demonstrated in this software.

Modelling and Forecasting Exchange Rates (2-days)

The course will focus on econometric techniques that will be shown to be particularly useful in the context of exchange rates, including estimation of complex systems of equations and nonlinear exchange rate models and cover both the theory and practice of these models. The course aims at people who have some knowledge of exchange rate economics and econometrics and have an interest in econometric modelling and forecasting nominal and real exchange rates. The course is built around EViews, however, other modern econometrics packages, including OxMetrics (PcGive™ / STAMP) and RATS™, might be used to demonstrate the use of the techniques.

An Introduction to Stata for Medical Statistics (4-days)

The aim of this course is to review the major statistical methods used in Medical Research and demonstrate them in Stata. The emphasis is on the practical side of the methods. Participants should, by the end of the course, be able to use Stata for carrying out their own analysis for the most common types of problem encountered in medical statistics. Examples from published research will be used wherever possible, and participants are encouraged to bring their own data.

An Introduction to Stata for Medical Statistics (4-days) The Practice of Pooled Time Series and Cross Section Econometric Modelling in EViews (2-days)

Panel data modelling provides a means to estimate and test economic relations when there are samples containing a time series of observations for a cross section of individuals, firms, markets, countries, etc. Recently, empirical research in economics and the social sciences in general, has been enriched by the availability of a wealth of new sources of this kind of data. The availability of panel data has stimulated a rapid growth in both methodological approaches and applications during the last 20 years. The panel data approach to economic research provides several major advantages over conventional cross-sectional or time-series approaches. The course aims to provide participants with the theory of the econometrics of panel data analysis, demonstrate the techniques with market and macroeconomic data samples in EViews, and show how to interpret and report the results.

Econometric Modelling with PcGive™ and Autometrics™ (2-days)

The objective of the course is to introduce recent developments in time-series econometrics on PcGive. The lectures will approach applied econometric issues from the LSE or Hendry tradition and focus on three key aspects of empirical model building: data properties, including integration and cointegration; dynamic specification, including the use of error correction models; and model evaluation and design. Special attention is given to **Autometrics**, which implements automatic model selection. The course is designed to be hands-on. No experience with PcGive or OxMetrics is required, but a reasonable level of econometrics knowledge will be assumed.

Energy Modelling and Forecasting (4-days)

This course will cover issues regarding the methodology, practice and implementation of econometric modelling of electrical time series data. Time series models in hourly, monthly and annual frequencies will be explored. In-class empirical presentations on the PC will demonstrate the approach and econometric questions as they arise. The course is designed to be very applied hence it is assumed that the participants have a basic knowledge of econometrics. EViews and PcGive will be the econometric software used in the course. No prior knowledge of the packages is required. Participants are invited to bring their own dataset for possible analysis during the course. These datasets should be sent to us at least 1 week prior to the course.



An Introduction to Stata for Medical Statistics (4-days) Modelling and Forecasting Volatility with GARCH models – from Theory to Practice (3-days)

This course aims to demonstrate GARCH modelling on OxMetrics. The focus will be on financial econometrics and estimation of volatility and risk. OxMetrics is the name of a family of software packages providing an integrated solution for the econometric analysis of time series, forecasting, financial econometric modelling and for the statistical analysis of cross-section and panel data. The course will focus on @GARCH module of OxMetrics. No prior knowledge of @GARCH or OxMetrics is required.

Unobserved Components Time Series Analysis using STAMP™ 7 and X12ARIMA (3-days)

The course aims to discuss Structural Time Series Models and the Kalman filter and demonstrate, using real-life business and industrial data, how to interpret and report the results using STAMP™ and SsfPack™. Structural time series models find application in many subjects, including, economics, finance, sociology, management science, biology, geography, meteorology, transportation, tourism and engineering. The course is, therefore, suitable for anyone who works with time series data in government or industry or teaches at Universities. A basic knowledge of time series analysis is assumed. Familiarity with the software is not required. If you want to get some familiarity with the software prior to the course, please request a demo copy.

Programming with GAUSS (3-days)

This course's main objective is to provide participants with basic understanding of Gauss, the ability to write simple programs and use GAUSS applications. The prerequisites for this course are basic matrix algebra and familiarity with a windows environment. The course will also provide hands-on experience in building econometric models with GAUSS – each delegate is provided with a computer throughout the course.

Timberlake Consultants Bookshop

Recent Additions

Microeconometrics using Stata

by A. Colin Cameron and Pravin K. Trivedi (2009; publisher: Stata Press) is an outstanding introduction to microeconometrics and how to do microeconomic research using Stata. Aimed at students and researchers, this book covers topics left out of microeconometrics textbooks and omitted from basic introductions to Stata. Cameron and Trivedi provide the most complete and up-to-date survey of microeconomic methods available in Stata.

An Introduction to Stata Programming

by Christopher F. Baum (2009; publisher: Stata Press) is worthwhile for anyone wanting to learn about programming in Stata. For the beginner, Baum assumes only that the user is familiar with Stata, and so he builds up accordingly. For the more advanced Stata programmer, the book introduces Stata's Mata programming language and provides optimization tips for day-to-day work. All readers will find better, new ways to approach old tasks.

Meta-Analysis in Stata:

An Updated Collection from the Stata Journal by Jonathan A. C. Sterne (2009; publisher: Stata Press) provides a collection of articles from the Stata Journal and makes the work of 21 authors available in one collection. Previously, you had to dig through many Stata Journal articles (and older Stata Technical Bulletin inserts) to find all the programs. All the articles are now in one volume, and the associated commands can be installed at one time.

The Workflow of Data Analysis using Stata

by J. Scott Long (2009; publisher: Stata Press) is an essential productivity tool for data analysts. Aimed at anyone who analyzes data, this book presents an effective strategy for designing and doing data-analytic projects.

Statistics with Stata (Updated for Version 10)

by Lawrence C. Hamilton (2009; publisher: Cengage) intends to bridge the gap between statistical texts and Stata's own documentation and demonstrates how to use Stata to perform a variety of tasks. This text is ideal as a self-study course for those new to statistics or those migrating from other statistical software to Stata and as a valuable reference for experienced Stata users wishing to explore Stata's capabilities in fields new to them.

The Methodology and Practice of Econometrics: A Festschrift in Honour of David F. Hendry edited by Jennifer L. Castle and Neil Shephard (2009; publisher: Oxford University Press) collects a series of essays to celebrate the work of David Hendry: one of the



most influential of all modern econometricians. Hendry's writing has covered many areas of modern econometrics, which brings together insights from economic theory, past empirical evidence, the power of modern computing, and rigorous statistical theory to try to build useful empirically appealing models. This book is a collection of original research in time-series econometrics, both theoretical and applied, and reflects Hendry's interests in econometric methodology.

A Guide to Econometrics, 6th Edition

by Peter Kennedy (2009; publisher: Blackwell Publishing). This is the perfect (and essential) supplement for all econometrics classes - from a rigorous first undergraduate course, to a first master's, to a PhD course.

Palgrave Handbook of Econometrics Volume 2 Econometric Theory, edited by Terence C. Mills and Kerry Patterson (2009; publisher: Palgrave Macmillan) comprises 'landmark' essays by the world's leading scholars and provides authoritative and definitive guidance in key areas of econometrics. With definitive contributions on the subject, the Handbook is an essential source of reference for professional econometricians, economists, researchers and students.

The Stata Survival Manual

by David Pevalin and Karen Robson (2009; publisher: Open University Press) offers a step by step introduction to the basics of the software, before gently helping you develop a more sophisticated understanding of Stata and its capabilities. The book will guide you through the research process offering further reading where more complex decisions need to be made and giving 'real world' examples from a wide range of disciplines and anecdotes that clarify issues for readers.

Multivariable Model - Building: A Pragmatic Approach to Regression Analysis based on Fractional Polynomials for Modelling Continuous Variables

by Patrick Royston and Willi Sauerbrei (2008; publisher: Wiley Blackwell) proposes a systematic approach to building multivariable regression models based on standard principles of statistical modeling. The main emphasis is on the fractional polynomial method for modeling the influence of continuous variables in a multivariable context, a topic for which there is no standard approach.

A Short Introduction to Stata for Biostatistics

by Michael Hills and Bianca L. De Stavola (2007; publisher: Timberlake Consultants) bridges the information in the Getting Started manual and the Reference manuals by providing a more detailed introduction to the most often used analytic methods in biomedical research. Although it is written specifically for biostatisticians, epidemiologists, and health professionals new to Stata, the book is useful for more experienced users wanting more in-depth knowledge of both Stata commands and biostatistical issues. The book is hands on, intended to be used while working with Stata, and includes a CD-ROM containing the datasets and several author-written programs.

A Short Introduction to Stata for Biostatistics Updated to Stata 11 is expected at the end of 2009.

Conferences

Visit our Stand

World Congress Econometric Society, August 17-22, 2010
Sjanghai, China

Joint Statistical Meetings (JSM), July 31 -August 6
2010, Vancouver, BC, Canada

Hope Conference History of Econometrics, Duke University Press
23-25, April 2010

American Economic Association (AEA) Annual Meeting,
January 3-5, 2010
Atlanta, GA, USA

North American Winter Meeting (NAWM) Econometric Society (ES),
January 3-5, 2010
Atlanta, GA, USA

European Economic Association Annual Meeting (EEA)
August 23-27, 2009
Barcelona, Spain

Latin American and Caribbean Economic Association (LACEA) meeting,
October 1-3, 2009
Buenos Aires, Argentina

Latin American Meetings Econometric Society (LAMES),
October 1-3, 2009
Buenos Aires, Argentina

International Conference on Computational and
Financial Econometrics (CFE),
October 29-31, 2009
Limassol, Cyprus

Conference Factor Models in Economics and Finance,
December 4-5 2009
London, UK

Torun conference,
September 8-10, 2009
Poland



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