Title

intro — Introduction to time-series manual

Description

This entry describes this manual and what has changed since Stata 11.

Remarks

This manual documents Stata's time-series commands and is referred to as [TS] in cross-references.

After this entry, [TS] **time series** provides an overview of the `ts` commands. The other parts of this manual are arranged alphabetically. If you are new to Stata's time-series features, we recommend that you read the following sections first:

[TS] **time series**	Introduction to time-series commands
[TS] **tsset**	Declare a dataset to be time-series data

Stata is continually being updated, and Stata users are always writing new commands. To ensure that you have the latest features, you should install the most recent official update; see [R] **update**.

What's new

1. **MGARCH**, which is to say, multivariate GARCH, which is to say, estimation of multivariate generalized autoregressive conditional heteroskedasticity models of volatility, and this includes constant, dynamic, and varying conditional correlations, also known as the CCC, DCC, and VCC models. Innovations in these models may follow multivariate normal or Student's t distributions. See [TS] **mgarch**.

2. **UCM**, which is to say, unobserved-components models, also known as structural time-series models that decompose a series into trend, seasonal, and cyclical components, and which were popularized by Harvey (1989). See [TS] **ucm**.

3. **ARFIMA**, which is to say, autoregressive fractionally integrated moving-average models, useful for long-memory processes. See [TS] **arfima**.

4. **Filters for extracting business and seasonal cycles**. Four popular time-series filters are provided: the Baxter–King and the Christiano–Fitzgerald band-pass filters, and the Butterworth and the Hodrick–Prescott high-pass filters. See [TS] **tsfilter**.

5. **Business dates** allow you to define your own calendars so that they display correctly and lags and leads work as they should. You could create file `lse.stbcal` that recorded the days the London Stock Exchange is open (or closed) and then Stata would understand format `%tblse` just as it understands the usual date format `%td`. Once you define a calendar, Stata deeply understands it. You can, for instance, easily convert between `%tblse` and `%td` values. See [D] **datetime business calendars**.

6. **Improved documentation for date and time variables**. Anyone who has ever been puzzled by Stata's date and time variables, which is to say, anyone who uses them, should see [D] **datetime**, [D] **datetime translation**, and [D] **datetime display formats**.

7. **Contrasts**, which is to say, tests of linear hypotheses involving factor variables and their interactions from the most recently fit model. Tests include ANOVA-style tests of main effects, simple effects, interactions, and nested effects. Effects can be decomposed into comparisons with reference categories, comparisons of adjacent levels, comparisons with the grand mean, and more. New commands `contrast` and `margins, contrast` are available after many time-series estimation commands. See [R] **contrast** and [R] **margins, contrast**.
8. **Pairwise comparisons** available after many time-series estimation commands. See [R] **pwcompare** and [R] **margins, pwcompare**.
9. **Graphs of margins, marginal effects, contrasts, and pairwise comparisons** available after most time-series estimation commands. See [R] **marginsplot**.
10. **Estimation output improved.**
    a. **Implied zero coefficients now shown**. When a coefficient is omitted, it is now shown as being zero and the reason it was omitted—collinearity, base, empty—is shown in the standard-error column. (The word "omitted" is shown if the coefficient was omitted because of collinearity.)
    b. **You can set displayed precision for all values in coefficient tables** using `set cformat`, `set pformat`, and `set sformat`. Or you may use options `cformat()`, `pformat()`, and `sformat()` now allowed on all estimation commands. See [R] **set cformat** and [R] **estimation options**.
    c. **Estimation commands now respect the width of the Results window.** This feature may be turned off by new display option `nolstretch`. See [R] **estimation options**.
    d. **You can now set whether base levels, empty cells, and omitted are shown** using `set showbaselevels`, `set showemptycells`, and `set showomitted`. See [R] **set showbaselevels**.
11. **Spectral densities from parametric models** via new postestimation command `psdensity` lets you estimate using `arfima`, `arima`, and `ucm` and then obtain the implied spectral density. See [TS] **psdensity**.
12. **dvech renamed mgarch dvech.** The command for fitting the diagonal VECH model is now named `mgarch dvech`, and innovations may follow multivariate normal or Student's t distributions. See [TS] **mgarch**.
13. **Loading data from Haver Analytics supported on all 64-bit Windows.** See [TS] **haver**.
14. **Option addplot() now places added graphs above or below.** Graph commands that allow option `addplot()` can now place the added plots above or below the command's plots. Affected by this are the commands `corrgram`, `cumsp`, `pergram`, `varstable`, `vecstable`, `wntestb`, and `xcorr`.

For a complete list of all the new features in Stata 12, see [U] **1.3 What's new**.

Reference

Harvey, A. C. 1989. *Forecasting, Structural Time Series Models and the Kalman Filter*. Cambridge: Cambridge University Press.

Also see

[U] **1.3 What's new**

[R] **intro** — Introduction to base reference manual