Postestimation commands

The following postestimation commands are of special interest after `var`:

Command	Description
fcast compute	obtain dynamic forecasts
fcast graph	graph dynamic forecasts obtained from `fcast compute`
irf	create and analyze IRFs, dynamic-multiplier functions, and FEVDs
vargranger	Granger causality tests
varlmar	LM test for autocorrelation in residuals
varnorm	test for normally distributed residuals
varsoc	lag-order selection criteria
varstable	check eigenvalue stability condition
varwle	Wald lag-exclusion statistics

The following standard postestimation commands are also available:

Command	Description
estat ic	Akaike's, consistent Akaike's, corrected Akaike's, and Schwarz's Bayesian information criteria (AIC, CAIC, AICc, and BIC, respectively)
estat summarize	summary statistics for the estimation sample
estat vce	variance–covariance matrix of the estimators (VCE)
estimates	cataloging estimation results
etable	table of estimation results
forecast	dynamic forecasts and simulations
lincom	point estimates, standard errors, testing, and inference for linear combinations of parameters
lrtest	likelihood-ratio test
margins	marginal means, predictive margins, marginal effects, and average marginal effects
marginsplot	graph the results from margins (profile plots, interaction plots, etc.)
nlcom	point estimates, standard errors, testing, and inference for nonlinear combinations of parameters
predict	linear predictions and their SEs; residuals
predictnl	point estimates, standard errors, testing, and inference for generalized predictions
test	Wald tests of simple and composite linear hypotheses
testnl	Wald tests of nonlinear hypotheses

predict

Description for predict

predict creates a new variable containing predictions such as linear predictions and residuals.

Menu for predict

Statistics > Postestimation

Syntax for predict

> predict [*type*] *newvar* [*if*] [*in*] [, *statistic* <u>eq</u>uation(*eqno* | *eqname*)]

statistic	Description
Main	
xb	linear prediction; the default
stdp	standard error of the linear prediction
<u>res</u>iduals	residuals

These statistics are available both in and out of sample; type predict . . . if e(sample) . . . if wanted only for
the estimation sample.

Options for predict

> [Main]

xb, the default, calculates the linear prediction for the specified equation.

stdp calculates the standard error of the linear prediction for the specified equation.

residuals calculates the residuals.

equation(*eqno* | *eqname*) specifies the equation to which you are referring.

> equation() is filled in with one *eqno* or *eqname* for options xb, stdp, and residuals. For
> example, equation(#1) would mean that the calculation is to be made for the first equation,
> equation(#2) would mean the second, and so on. You could also refer to the equation by its name;
> thus, equation(income) would refer to the equation named income and equation(hours), to the
> equation named hours.

> If you do not specify equation(), the results are the same as if you specified equation(#1).

For more information on using predict after multiple-equation estimation commands, see [R] **predict**.

margins

Description for margins

margins estimates margins of response for linear predictions.

Menu for margins

Statistics > Postestimation

Syntax for margins

margins [*marginlist*] [, *options*]

margins [*marginlist*] , <u>predict</u>(*statistic* ...) [<u>predict</u>(*statistic* ...) ...] [*options*]

statistic	Description
default	linear predictions for each equation
xb	linear prediction for a specified equation
stdp	not allowed with margins
<u>residuals</u>	not allowed with margins

xb defaults to the first equation.

Statistics not allowed with margins are functions of stochastic quantities other than e(b).

For the full syntax, see [R] **margins**.

Remarks and examples

Remarks are presented under the following headings:

Model selection and inference
Forecasting

Model selection and inference

See the following sections for information on model selection and inference after var.

[TS] **irf** — Create and analyze IRFs, dynamic-multiplier functions, and FEVDs

[TS] **vargranger** — Pairwise Granger causality tests

[TS] **varlmar** — LM test for residual autocorrelation

[TS] **varnorm** — Test for normally distributed disturbances

[TS] **varsoc** — Obtain lag-order selection statistics for VAR and VEC models

[TS] **varstable** — Check eigenvalue stability condition

[TS] **varwle** — Obtain Wald lag-exclusion statistics

Forecasting

Two types of forecasts are available after you fit a VAR(p): a one-step-ahead forecast and a dynamic h-step-ahead forecast.

The one-step-ahead forecast produces a prediction of the value of an endogenous variable in the current period by using the estimated coefficients, the past values of the endogenous variables, and any exogenous variables. If you include contemporaneous values of exogenous variables in your model, you must have observations on the exogenous variables that are contemporaneous with the period in which the prediction is being made to compute the prediction. In Stata terms, these one-step-ahead predictions are just the standard linear predictions available after any estimation command. Thus predict, xb eq(*eqno* | *eqname*) produces one-step-ahead forecasts for the specified equation. predict, stdp eq(*eqno* | *eqname*) produces the standard error of the linear prediction for the specified equation. The standard error of the forecast includes an estimate of the variability due to innovations, whereas the standard error of the linear prediction does not.

The dynamic h-step-ahead forecast begins by using the estimated coefficients, the lagged values of the endogenous variables, and any exogenous variables to predict one step ahead for each endogenous variable. Then the one-step-ahead forecast produces two-step-ahead forecasts for each endogenous variable. The process continues for h periods. Because each step uses the predictions of the previous steps, these forecasts are known as dynamic forecasts. See the following sections for information on obtaining forecasts after svar:

> [TS] **fcast compute** — Compute dynamic forecasts
> [TS] **fcast graph** — Graph forecasts after fcast compute

Methods and formulas

Formulas for predict

predict with the xb option provides the one-step-ahead forecast. If exogenous variables are specified, the forecast is conditional on the exogenous $\mathbf{x}_t$ variables. Specifying the residuals option causes predict to calculate the errors of the one-step-ahead forecasts. Specifying the stdp option causes predict to calculate the standard errors of the one-step-ahead forecasts.

Also see

[TS] **var** — Vector autoregressive models

[U] **20 Estimation and postestimation commands**